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ABSTRACT

This collection contains revised versions of 15 state-of-the-art papers and 7 commentaries given at the first conference of the New Zealand Association for Research in Education (NZARE). Each article surveys a single field relating to contemporary educational research in New Zealand, including the aims, methods, and significance of the studies reviewed. The authors have included bibliographies and lists of other scholars working in their fields. The 15 topics covered are: early childhood education, child development, education of Maori children, special education, guidance and counseling, sociology of education, women and education, history of education, measurement and testing, classroom studies, behavior analysis, reading, science education, mathematics education, and continuing education. (Author/GPM)

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Research Monograph No. 3

Research in Education in New Zealand

The State of the Art

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Research in Education in New Zealand

The State of the Art

Papers from *Research in Education in New Zealand: Striking the Balance*, First National Conference of the New Zealand Association for Research in Education (NZARE), Victoria University of Wellington, 7–10 December 1979

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1980

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Foreword

This volume contains revised versions of the fifteen state of the art papers and seven commentaries given at the inaugural conference of the New Zealand Association for Research in Education (NZARE). Each state of the art paper surveys a single field; together, with the commentaries, they give readers a unique insight into much of the contemporary New Zealand research relating to education.

The principal authors have approached their task in varying ways but they all list the scholars active in their fields and mention the agencies and institutions which support or sponsor their work. Above all, they record, analyse and comment on the aims, methods and significance of the studies reviewed. As a result, the reader cannot help but become sensitive to the issues and approaches that are central to and characteristic of each of the areas. The volume does not cover all New Zealand research, but it makes a good start.

We confidently expect the publication of these papers to become a landmark in the development of research in education in New Zealand and we are glad to have *Delta* associated with us in this endeavour. Here then is the state of the art at the beginning of the 1980s.

Geraldine McDonald
President

NZARE is grateful to the authors for their work, to NZCER for its assistance, to Miss Carlene Grigg, who typed the manuscript, to *Delta* for its decision to join with us in making this valuable set of papers widely available, and to Ross St. George *(Delta)* for overseeing publication.

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Research on Early Childhood Education in New Zealand

Anne Meade
Early Childhood Unit
New Zealand Council for Educational Research

My task in preparing this paper was made easier by my decision in 1978 to compile a bibliography of New Zealand early childhood research between 1965 and 1978 in order that I might carry out the consultancy aspect of my work for NZCER effectively. With the groundwork done by Geraldine McDonald's bibliography (1975) and a supplementary list compiled by the then *set* editor, Keith Pickens (1978), I searched libraries and circularised universities and teachers colleges for additions. The result was a 441 item Bibliography (with annotations) published this year (Meade, 1979). There has been a large increment in material during 1979 with 43 papers coming from one source alone - the Second Early Childhood Care and Development Convention.

When I was gathering material together in preparation for writing this paper, I did some content analysis of the *New Zealand Early Childhood Care and Education Bibliography* but I decided to go beyond straight facts and figures and do a little investigation to provide descriptions of issues and the people in early childhood research as well.

Facts and Figures

The items in the Bibliography are grouped under 15 headings. The subject headings are those used by the American Educational Resources Information Center (ERIC), and each item is listed only once. Table 1 provides an analysis of the 441 items. It shows how many items are in each section as well as the number and proportion of items within each section which have been published or which are theses. The remaining items in each section are generally conference papers or unpublished research reports.

A paper presented at *Research in Education in New Zealand: A Balance Sheet*, First National Conference of the New Zealand Association for Research in Education (NZARE), Victoria University of Wellington, 7-10 December 1979.

Table 1: Analysis of *New Zealand Bibliography of Early Childhood Care and Education* Items

Sections	Item Total	Published	%	Completed Theses	%
Child Development	78	36	*(46)*	23	*(29)*
Child Language	28	12	*(43)*	9	*(32)*
Early Childhood Education	85	43	*(51)*	15	*(18)*
Ethnic Studies	27	19	*(70)*	5	*(19)*
Family Life	25	20	*(80)*	-	
Handicapped Children	52	33	*(63)*	6	*(12)*
Infant Behaviour	16	5	*(31)*	4	*(25)*
			(+ 2 videos)		
Media Research	10	5	*(50)*	1	*(10)*
Parent Education	13	8	*(62)*	2	*(15)*
Parent Participation	5	3	*(60)*	-	
Parents	15	8	*(53)*	1	*(7)*
Pre-School Teachers	17	11	*(65)*	4	*(24)*
Programmes	30	18	*(60)*	4	*(13)*
Research	30	16	*(53)*	-	
Training	10	5	*(50)*	2	*(20)*
Total	441	242	*(55)*	76	*(17)*

Early childhood education (a 'catch-all' category mostly concerned with descriptions and analyses of early childhood institutions) and child development are the areas which are, by far, the most frequently studied or written about.

It can be seen that child development (23) and early childhood education (15) are also the most popular areas of study for theses. However, the area of study which attracted the greatest proportion of thesis students was child language - 32 per cent of these items were thesis studies. Family life and parent participation are the areas which seem not to attract thesis students. In addition to the 76 completed theses, 5 lecturers reported theses in progress. Of these 81 theses : 8 were for a PhD; 40 were in education; 24 were for a diploma (Dip. Ed. or Dip. Ed. Psych.); 7 were in psychology; 1 was in English; and 1 in social science.

Fifty-five per cent of the items had been published. Material about family life, or about Maori and Pacific Islanders and early childhood education (termed ethnic studies), had the best record for being published, whereas infant behaviour studies had the smallest proportion of studies published. However, infant behaviour researchers have used another form of dissemination, namely videotape, on two occasions.

A comparison of these statistics with some pertaining to Geraldine McDonald's 1975 bibliography reveals that in the mid-1970s early childhood education papers were the most prevalent with 14 items fitting into this category. However, there was a far higher percentage of papers being written about Maori and Pacific Islanders' involvement in early childhood education - there were 10 such papers or books in the earlier bibliography (17 per cent) which equalled the items about child development. The proportion dropped to 6 per cent in the 1979 Bibliography with 14 authors contributing 27 items. Considering the amount of discussion on multi-cultural issues amongst educationists, there is a paucity of ethnic studies in the 1970s - it would seem that most of the discussants are only paying lip-service to understanding the issues. None of the 1975 items could be categorised as parent participation nor as papers about research.

The number of theses studies has grown dramatically. The previous bibliography listed 27; my 1979 Bibliography includes 81. Sixty-six per cent of the theses in the 1975 Bibliography were supervised by university departments of education, and this proportion rose to 77 per cent in the 1979 Bibliography. I may have been more conscientious about seeking out theses, but I believe there has also been a rapid growth in thesis studies.

In the 1975 Bibliography 24 (40 per cent) of the items had been published. Fifty-five per cent of the items in the 1979 Bibliography had been published. More importantly, however, more of them are to be found in widely-available books and journals, and researchers are learning to use other media, such as video, to disseminate findings. This was boosted by two sets of conference papers - those from the

First Early Childhood Care and Development Convention (*Early Childhood in New Zealand*, O'Rourke and Clough, 1978) and the Invitational Conference on Early Childhood Research in New Zealand (*Young Children and Early Childhood Services: Some New Zealand Research*, McDonald and Dinniss, 1978) - being published in 1978. The 1979 Second Early Childhood Care and Development Convention Papers (*Early Childhood in New Zealand: Their Needs Our Concern*, Neale and Renwick, 1979) were rapidly available - they were printed and out by the last day of the convention. Earlier published material was often invisible to researchers because it was only found in journals issued by the early childhood organisations.

Issues: New Zealand

I was curious to know whether the topics being researched arose out of the pragmatic concerns felt by New Zealand early childhood workers and administrators, so I had a quick look through the records of the early 1970s of the three main movements - playcentre, kindergarten and child care centres. I intend now to give an overview of the issues affecting the Playcentre Federation, the Free Kindergarten Union, the Kindergarten Teachers Association and the Association of Child Care Centres; then comment on any relationships (or lack thereof) between the issues and research in early childhood.

The New Zealand Playcentre Federation was concerned about many issues. Its only case to Government was for funds for training officers' expenses. Other oft-mentioned concerns were: the public's view of pre-school education generally and playcentre education particularly; the effects of the changing role of women on voluntary organisations; maintaining parent involvement and education; the allocation and effects of government funds; and matching provision of service with needs.

In the New Zealand Free Kindergarten Union records of the early 1970s, I found repeated reference to expansion in the number of kindergarten places, provision of training, and the need for supervising head teachers. They seldom questioned the effects of what they did or wanted for the future. Their concerns were at a very practical level, although they began asking in recent years for evaluation of extra groups attached to kindergartens.

Salaries and training tended to dominate the New Zealand Free Kindergarten Teachers Association meetings in the early 1970s. The NZFKTA has been concerned about the effects of extra groups of children attending some kindergartens - groups of handicapped children and second groups of children attending on two afternoons. They have been pursuing related issues in the late 1970s - group size, and adult : child ratios.

Some of the New Zealand Association for Child Care Centres' issues were common to all early childhood organisations and some were unique. They were concerned about the public's view of child care, their shaky financial position and the effects of Government funding, and training; as were the other organisations in varying ways. Their own unique issues were out-of-date Regulations and the inequitable provision of child care with very inadequate facilities for after-school and holiday care.

Did any researchers address themselves to these issues? The answer appears to be 'only sometimes', although papers have been written on them without relying on research findings. Generally speaking, they are not issues that can be turned into research topics; for example, the practical question of 'How can we get more money?' is not researchable. And researchable issues seldom became research projects; for example, to my knowledge my PhD research is the only systematic study of the effects of funding decisions on pre-school organisational functioning.

The same study investigated parent views of early childhood services. There have been many other studies which incorporate different people's viewpoints of various service as a component. Another commonly tackled issue is research into the matching of provision of service to need. David Barney undertook the largest project; a nationwide study reported in *Who Gets to Pre-school?* (Barney, 1975). In addition, Maris O'Rourke, Penny Jamieson and myself have each investigated and written about meeting the needs of young families. However, no-one has done an availability study of child care. I suspect it would show up inequities in provision, as was found in other services. With increased diversification of services being sought, people are suggesting that community surveys will be necessary; but the only ones done by researchers to date are those organised by the Department of Social Work at Victoria University, and two by the Society for Research on Women. The Town and Country Planning Division of the Ministry of Works and Development is currently preparing a kitset of guidelines for community surveys.

The provision of training has engendered some research. Joan Brockett did a pilot study towards evaluating kindergarten training; and a training-related research project on the aims and tasks of kindergarten teachers was completed this year by June Kean from the North Shore Teachers College. Estelle von Sturmer has, in 1979, taken up a position involving some research into child care training.

Geraldine McDonald has written a good deal about the changing role of women and the implications for early childhood services, although she has relied on research results for only a fraction of the papers. She has also, in conjunction with the Playcentre Federation, conducted a project on parent helping in playcentres which looks at the involvement and education of parent helpers.

In the mid-1970s the Kindergarten Union joined with the NZFKTA in asking for an evaluation of the extra groups attached to kindergartens - groups of handicapped children, and extra groups of children attending some afternoons in kindergartens with long waiting lists. The Department of Education did undertake an 'in-house' evaluation of the extra afternoon groups but the findings never became public information. The NZFKTA has now also become concerned with group size and ratios. Some data on group size and on ratios will be generated by my investigation of adult-child interactions in six early childhood programmes in early 1980.

To sum up, it could be said that research into the issues concerning the leaders of the three early childhood movements is patchy and often takes place several years after the issue raises its head. Of the researchable issues which have not been investigated, some have been written about as 'thought pieces', but others have never been picked up and studied in any way.

However, there has been research on matters of day to day importance to workers and parents which has struck a chord. The topics have not been burning issues for national administrators. Research such as the Going to School project, the Maori Family Education Association pre-schools study and the Parent Helpers project all done by New Zealand Council for Educational Research staff have reflected the concerns of the folk at the 'chalk face'. Michael Parsons, Peter Hallinan, Liz Straton and David Mitchell's studies on handicapped children have similarly been very sensitive to issues for families with handicapped children. Practical concerns have been researched, but often written up too much in the academic mode to be readily useful for staff and parents.

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Issues: Overseas

What are the issues of current concern to early childhood researchers overseas? Are we concerned with similar matters in New Zealand? Administrators and politicians in the United States and in Britain have been most concerned with provision of early childhood services for disadvantaged children. Because enormous amounts of money were poured into providing pre-school programmes in the 1960s, there was also money available for expensive evaluations of the effects of pre-school education; for example, for Headstart evaluations. In New Zealand we have few studies concerned with effects. The exceptions are Anne Smith's studies on the effects of day care on children's dependency behaviour and Jane Ritchie's study of the effects of the Bereiter and Engelmann programme on children attending the Te Kohanga experimental pre-school. On the whole, decision-makers, staff and parents in New Zealand are amazingly accepting of the reputed benefits of pre-school education. There has been no pressure for researchers to produce 'proof' of the positive effects or to check whether there are any detrimental consequences.

When I had preliminary discussions with educators in the three main movements about the direction I should take in a research project on early childhood programmes, none of them could specify effects on the children in which they were strongly interested. They are fostering processes, not achievement scores. The playcentre people were more interested in my investigating effects on family behaviours. Barry Burdon attempted such a study and found no significant shift in attitudes resulting from playcentre experience.

Why do we not show interest in the effects of pre-school education on children? I believe there are two reasons. First, early childhood education has not been politicized here in the same way as it was in the United States with the compensatory programmes. And relatedly second, there have been no large sums of money available to carry out expensive evaluations.

Apart from our lack of evaluative research, do we share research interests in common with research colleagues overseas? The Organization for European Co-operation and Development has been concerned with integration and co-ordination of services and the transition into school. This international organisation affected the research being done for the NZ/OECD Conference on Early Childhood Care and Education, 1978, and a cluster of projects examined co-ordination of service. Margery Renwick had already collected her data on the going to school process, so New Zealand was in front of other countries with research into the transition into school.

The National Foundation for Educational Research in Britain in the mid-1970s has been most concerned with disadvantaged children, reading and books, parent helping, interaction in the classroom, and record keeping and assessment of pre-school education. In New Zealand, studies have been done or are in process on all the topics except the questions of record keeping and assessment.

American researchers show a wide range of interest in child development issues but the sociological studies have been concerned with the effects of 'fractured' families, sex role learning, and parenthood training. Researchers in New Zealand have tackled the latter questions and we have two of them in our midst at this symposium. Elizabeth Connelly has been interested in sex role learning for several years now and Bruce McMillan is writing up a PhD study on parenthood training.

It would seem therefore that we do research on similar topics to overseas early childhood researchers except in the important area of summative evaluations of pre-school programmes.

People in Early Childhood Research in New Zealand

I have been name-dropping during the earlier part of this paper, but I would like to turn now to a more systematic description of the people who appear most frequently in the *New Zealand Early Childhood Care and Education Bibliography: 1965-78.*

It was no surprise to find which occupational group was the typical group of early childhood researchers: university lecturers. Part of their job is to carry out research and they get the results into print. The American 'publish or be damned' ethos has an influence in New Zealand. The other main group comprise paid research officers. Table 2 sets out a list of authors who have 5 or more items in the Bibliography and their occupation.

Table 2: Authors Who Appear Frequently in the *New Zealand Early Childhood Care and Education Bibliography*

Author	Occupation	No. of Items
David Barney	Professor of Education, Auckland University	15
Barbara Calvert	Professor of Education, Otago University	5
Marie Clay	Professor of Education, Auckland University	12
Penny Jamieson	Research Officer, NZCER	5
Philip Lawrence	Professor of Education, Canterbury University	12
Don McAlpine	Lecturer in Education, Massey University	8
Geraldine McDonald	Assistant Director, NZCER	27
Bruce McMillan	Lecturer in Education, Otago University	5
Anne Meade	Research Officer, NZCER	12
David Mitchell	Lecturer in Education, Waikato University	8
Maris O'Rourke	Lecturer in Early Childhood, Auckland Teachers College	8
Fay Panckhurst	NZCER, Wellington Teachers College, National Foundation for Educational Research	5
Michael Parsons	Lecturer, Education of the Deaf, Christchurch Teachers College	13
Margery Renwick	Research Officer, NZCER	5
Jane Ritchie	Lecturer in Psychology, Waikato University	11
Phil Silva	Executive Director, Dunedin Multi-disciplinary Child Development Study, Otago University	20
Anne Smith	Lecturer in Education, Otago University	6
Society for Research on Women in NZ	Volunteer researchers	6
Liz Straton	Developmental Psychologist, Department of Education	5
David Swain	Lecturer in Sociology, Waikato University	12
Keri Wilton	Lecturer in Education, Canterbury University	6

NB: Total number of authors = 21 (10 male and 10 female)

It was not possible to ascertain from the items, just how many papers were primary research reports. I think it would be fair to say that most of the authors in Table 2 have done only a few pieces of research. The only author whose number of items matches the number of research projects is the Society for Research on Women. The other authors generally have written a series of articles based on a lesser number of actual projects. I am not 'knocking' this process because I believe in wide dissemination of research results. There are other researchers who desseminate their findings widely but do not write formal papers so often. They may not record all their talks they give for bibliographical purposes and yet they may have as much influence in the field as those who write a lot of formal papers.

The university staff include four professors of education and it is generally they who write for an international audience. However, other lecturers who have an interest in handicapped children tend also to have a reputation within New Zealand and beyond our shores. It is interesting to note that not all the lecturers are from Education Departments - Jane Ritchie is in a Psychology Department and David Swain in a Sociology Department.

Geraldine McDonald is the most prolific writer about early childhood topics and I don't think this is just an artifact of my knowing all she has done whilst I may be unaware of other people's productivity. She writes and talks to groups frequently; and on a range of early childhood topics. Geraldine McDonald has a background of study, and lecturing at teachers colleges and university, and was the first appointee to the Early Childhood Unit at NZCER. It could be said that she has made the most of her research projects - of the 27 items are 'thought pieces', using the research findings as illustrative material, or critiques of other people's research.

Phil Silva is also a prolific writer with 20 items in the Bibliography, all of which relate to one longitudinal cohort study. He is the Executive Director of the Dunedin Multi-disciplinary Child Development Study. Phil Silva falls into an atypical group of early childhood researchers - his research has considerable support from medical funds.

There are a few other authors in the table above who do not fit in the norm of university lecturer or research officer and who deserve consideration. They are Maris O'Rourke, Michael Parsons, the Society for Research on Women and Liz Straton. Maris O'Rourke is part of the university system in that she is currently studying for her PhD at the University of Kansas. However, only one item in the Bibliography stems from her thesis study. Her style of lecturing at teachers college includes setting an assignment each year asking students to research, say, participation in story reading groups in kindergartens. She goes beyond the normal assignment process and collates the results and writes them up. Michael Parsons is also a teachers college lecturer. His special field is education of the deaf with a particular interest in involving parents. Michael Parsons edits *The Journal for the Hearing Handicapped,* has won awards for a film *The Deaf Child in the Family* and has an international reputation for his work which probably generates more and more requests for articles. The Society for Research on Women is a voluntary organisation aiming to collect data on matters relating to women. All of their bigger projects are reported in a research monograph but they seldom write further secondary articles about their work. Liz Straton is a developmental psychologist who, mostly through her own initiative, has been working with very young handicapped children and their parents, and writing evaluative reports about the 'Dawnstart' scheme.

What about the other authors in the Bibliography? Who are they? Two hundred and twenty-seven authors are cited in this work, and about one-third of them are theses students. There are also articles by practitioners - pre-school advisers, teachers, speech therapists, playcentre personnel and so on - who have done a small piece of research and written one paper. Some lecturers in the field have only written one or two articles. It is revealing that 82 per cent (187) of the authors in the Bibliography have only written one or two articles, but generally each is a primary research report, albeit with fairly tentative findings if it is the author's first attempt at research.

It is commonly believed that the early childhood care and education field is a women's area. This is not borne out amongst early childhood researchers. Six of the authors were organisations (3 being women's groups). Of the remaining 221 authors, 103 were women and 118 men! The note to Table 2 indicated that equal numbers of both sexes were prolific writers.

Conclusion

Six points emerge from all these analyses of the *New Zealand Early Childhood Care and Education Bibliography* and comparisons with other data.

1. There has been an accelerating increase in material about early childhood care and education being written in New Zealand in the last decade. This increase continues with the recurrence of conventions on the topic.
2. More of the material is being published, and in more accessible publications.
3. Most of the authors have written only one or two articles.
4. When an author writes frequently, she or he is usually relating the material to only a few research projects.
5. Although major research projects have relevance to 'ordinary' staff and parents, only occasionally do they match issues facing the leaders of the main early childhood organisations.
6. Research workers in early childhood care and education are as likely to be women as men.

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Other works mentioned in the text will be found in Meade (1979) above.

Commentary

Bruce McMillan
Department of Education
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To review the work on early childhood education, I intend to do two things: first, summarise the main thrusts of the four papers presented; and second, take from the papers, and the discussion, as filtered through my idiosyncratic spectacles, some of the major issues which emerged and which are relevant to future research in this area.

Anne Meade presented a state-of-the-art paper[1] based almost entirely on the material collected for the NZCER's bibliography entitled *Early Childhood Care and Education 1965-1978.* She counted the studies, described in general terms who was undertaking them, and provided a useful set of references and tables. This should make subsequent reviews of the literature a lot easier. It will also help to answer any questions interested people may have about the research in this area. But I must confess to some disappointment. While a listing of research studies is only part of the purpose for a review, it is nevertheless expected to be comprehensive. Unfortunately Anne has not included the Christchurch Early Childhood Care and Education conference of August 1979, surely the most recent significant collection of New Zealand research on early childhood. Nor does the paper deal clearly with what constitutes research into early childhood education: of the 85 items indexed in the bibliography, only 25 take an empirical approach to a particular component; quite a few of the remainder are expository articles which cannot be described as research either empirical, historical, or other. The paper regrets that we have no summative studies of the effects of preschool programmes: but avoids the issue of whether we actually have 'programmes' at all. I will not elaborate upon other disappointments I experienced, but must draw attention to the importance of one point Anne's bibliography makes: there are many categories of studies which legitimately fall under the heading of 'early childhood education': ethnic studies, family life, handicapped children, parent education, etc., are also important sections, and point to the multidisciplinary aspect of this, as of any other field of education.

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[1] Anne Meade, *Research on Early Childhood Education in New Zealand.*

Let me return to the issue of programmes. Allen Hall[2] presented an excellent review of some literature on this topic as it concerns New Zealand early childhood education, and made a number of suggestions about future research areas that will gladden the heart of any thesis supervisor with a student uncertain what to tackle! Perhaps his major point is that there are clear techniques for observing what actually happens, and that we need enormous amounts of good descriptive material rather than search for as yet illusory 'programmes'.

Elizabeth Connelly,[3] who has contributed much to our understanding of sex role differences in young children, also gave a thoughtful paper rich in suggestions for research. How reassuring it is to hear someone say, with the conviction of much evidence, that you have to measure something before you can say whether it is or is not a feature: even some of those who believed they were providing the appropriate wide variety of play activities have been surprised by the actual evidence.

Peter Dinniss had a useful approach:[4] he introduced himself, his paper, and the three important pages in it; told us to read it; then handed everything back to the chairman. But after all, early childhood education has always been an area where discovery learning rather than instruction was the norm.

Now what are the major issues from all of this which should help to shape future research?

First, *the educational component of early childhood education is not synonymous with education in the school system.* The notions of instruction and achievement in specific subject areas tend to figure prominently in discussions of research into school learning, though not exclusively. Such notions are scarcely applicable in early childhood. Thus the models used for research designs in this area need careful elaboration. I would suggest that, for early childhood, child development is a much more powerful concept than learning.

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[2] Alan Hall, *The Future of Research into New Zealand Pre-School Programmes: The Case for a Descriptive Approach.*

[3] Elizabeth Connelly, *Who Gets to Play Where?*

[4] Peter Dinniss, *The Future of Early Childhood Research - Two Themes.*

Second, *early childhood education stresses attention to the family and social context of children's experience as part of their education.* Peter Dinniss argued in part that educational and other community support for parents rearing young children was in fact the best way to provide early education. Many would agree, and would reduce any emphasis on specific programmes within preschool education. Any researcher unable to keep these conceptual complexities distinct in his or her mind is doomed to produce strange conclusions. Perhaps more than anywhere else in this conference, the injunction to respect 'the experimental ecology of education' (Bronfenbrenner) is a categorical imperative.

Third, *since development is such a central focus, early childhood educators are likely to be less interested in research which reveals the immediate effects of specific procedures.* That should not mean that changes in teacher/supervisor/parent behaviours and their consequences for children's play or behaviour should be ignored. But it does mean that the long-term consequences of carefully described and delineated procedures, as part of a broad, on-going stream of development, need to be investigated, if really important conclusions about early education are to be made. This, by the way, is anathema to any who seek evidence of the immediate benefits of preschooling.

Fourth, *because of what I have been saying about children, it must be remembered that early childhood educators are frequently intensively involved with parents and other community or professional people.* Much of the research is in fact being done by these people, and while much of it will not appear in international journals, none of us can afford to ignore it. The questions being asked by these people, and the variables they attend to, are essential. Their interest and even deep commitment to what is going on mean a lively interchange of ideas within the group, and a great deal of collected wisdom. Their very real participation in 'Research' ensures a ready climate of sympathetic and critical reception for other research, and a rapid, informal network for disseminating results where it really makes a difference.

Woe betide any researcher who misunderstands or under-rates these points. If he is not willing to learn from those who are doing the educational job, he will never undertake research in the real world of early childhood education.

Research on Child Development in New Zealand

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If child development were to be interpreted narrowly to mean the subdiscipline of developmental psychology my task would be easy. I could claim that there is little of such research in New Zealand and no current state to discuss. There are six members of the Society for Research in Child Development in this country who presumably receive the excellent publications *Child Development*, *Child Development Abstracts* and the *Monograph* series. The Society Newsletter carries masterly two-page reviews on current issues that deserve attention. It would be pointless to try to count the contributions of our colleagues to journals like those, and to *Developmental Psychology*, the American Psychological Association publication; the problem would be that of extremely low incidence behaviour. The questions of developmental psychology are questions about change. Research aims to identify and represent intra-individual change and inter-individual differences in changes. It aims:

1. To describe what occurs.
2. Or to analyse and explain differences by contrasting existing groups, cultures, generations.
3. Or to make a functional analysis of what controls change.

A range of research strategies are needed to:

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> Describe and monitor the course of development, provide a continuing elaboration of processes that account for developmental shifts, and do so in ways that are ecologically valid providing a solid and meaningful base for public policy and intervention.
>
> (Parke, 1976)

In New Zealand we teach many courses in child development but we do not provide incentives or resources for a viable and continuous research programme studying our children.

If child development were to be interpreted broadly to mean what any discipline has discovered about children in our country then my task is a difficult one. The research studies are small in number and diverse in nature. They are weak enough in design to call for extensive explanations of why another approach would not have yielded a better payoff for resources used. I will take this second and broader interpretation, and I will select for discussion those projects which best enable me to make some comments on the state of things today and the prospects for tomorrow. I cannot mention all the published or ongoing studies. There are three recent publications which summarize most of what we know about children growing up in New Zealand. These are *Growing Up in New Zealand*, *Growing Up in Polynesia* (Ritchie and Ritchie, 1978, 1979) and *Adolescence in New Zealand*, (Stewart, 1976). A critical appraisal of these publications will reveal the state of the art. We have some small bodies of knowledge which are like solo themes not yet related to the orchestrated whole of young people in the process of change in our society. We need a massive surge of developmental research to provide a better information base.

The idea of having a sound information base has caught on for the Household Survey of New Zealand Homes but does not extend to knowing about children. It is very significant that the New Zealand Planning Council and the Commission for the Future do not discuss children and their preparation for the roles they will carry in society in recent reports. We think forward in agriculture, in forestry, in fishing; we have economic strategies, international policies, and plans for long-term futures in energy resources. Children are not seen as the human resources of the future. It is as if we do not realise that it is even possible to ask future-oriented questions about children. Yet parents are great planners of their children's futures.

Physical Growth and Health Issues

There has been an historical link between medicine and child study in New Zealand from the days of Doris Gordon and Truby King. Probably the best set of data we have is the physical growth data on school children collected by the Department of Health at intervals over half a century and last reported in 1969. (A supplementary report on pre-school children was published in 1973.) This has allowed New Zealand figures to appear in comparative reports of world trends and we know where we stand in comparison with other countries. Stewart (1976) was plainly wrong when he claimed that data on the onset of puberty were lacking. Much can be inferred from excellent data on height and weight growth spurts, the onset of menstruation and pubic hair development.

Continuing the physical growth theme I will look briefly at three programmes of research currently operating in New Zealand rather to warn of the medical dominance in this field than to point to a research model or to significant gains for developmental psychology. None of the three programmes qualify as developmental psychology projects, yet all are concerned with child development. The projects are the Christchurch Child Development Study (Shannon, 1979), the Dunedin Multidisciplinary Project (Silva, 1979), and the programme of co-operative research between Auckland University's Departments of Education and Paediatrics (MacArthur, 1976).

The Christchurch study aims to examine inter-relationships between social and medical factors, and the problems of childhood. The investigation is particularly concerned with factors in society which may place the child at risk in a variety of ways. Examples of such areas of concern are planned and unplanned pregnancy, factors associated with low birth weight and prematurity, duration and success of breast feeding, family separation, patterns of illness and delivery of medical care. The methods used are questionnaires to parents, interviews and medical examination. Behaviour of children is not observed or recorded. Individual development is not the unit of analysis. The conception is sociological, and the modes of achieving changes are seen to be social and political policies on the one hand and medical guidance on the other. The project is supported by the Medical Research Council and the National Child Health Foundation. It began in 1977 and expects to have continuing support for seven years. The variables studied will provide important background information for psychologists studying child development.

The Dunedin Multidisciplinary Project has been operating for seven years. Support has come from the Medical Research Council, the National Child Health Foundation, Foundation 41, the Departments of Education and Health, and the University of Otago. It is a longitudinal study of the long-term growth and development of a cohort of 1,000 children with the following purposes:

1. To study children who experienced early medical problems that required neonatal intensive care (delivery problems, neonatal hypoxia, preterm delivery, low birth weight, and neonatal problems such as hyperbilirubinaema, apnea and respiratory distress syndrome).
2. To define the contribution of a variety of environmental and experiential factors to child development and to the problems of child development.
3. To produce data on the incidence of developmental disorders, and
4. on more effective identification, and
5. on intervention techniques.

These goals place impossible demands on one research design. For a valid approach to such different questions a researcher would usually select different research designs for incidence studies, for descriptions of change over time, and for effective intervention studies.

Eighty-two papers were listed in a recent review of the project but developmental psychology figures only in a very few of them:

1. Attachment objects.
2. Behaviour problems *described* by mothers, teachers and testers.
3. Reading behaviour of seven year olds.
4. Speech articulation.
5. Sex difference on entry to school.

The last study, for example, confirmed known trends, on a sample of 479 girls and 512 boys. 'Why do boys and girls differ in their development and behaviour?' The answer given was 'It is beyond the scope of this brief paper to even begin to outline some of the complex and controversial issues, theories and supplementary evidence that is accumulating on this topic.' But it was also beyond the scope of the research design to add new light on this important topic. To answer 'why' questions in social science one must design several studies for that explicit purpose systematically attacking the complex variables involved and handling with care and insight the antecedent and consequent issues.

Almost contemporaneously a programme of co-operative research projects has been completed involving the University of Auckland's Departments of Education and Paediatrics. The topics covered have been low birth weight and prematurity, neonatal meningoencephalitis, long-term survivors of cardiac surgery using profound hypothermia and circulatory arrest, gastro-enteritis, children whose mothers had steroid treatment at the time of childbirth because of premature labour, hypoglycemic children, rhesus haemolytic disease of the newborn, spina bifida children, and cerebral palsied children. The research designs used were prediction-type studies in which children with identified conditions in infancy are located at two points, before entry to school and after a time in school and psychological assessments made. Control groups of several kinds have been used with meticulous attention to sampling, matching and following up children who move to other centres. There is a flexibility in this set of procedures not found in a longitudinal cohort approach; they are considerably cheaper, and the controls over important variables are better. A critical comparative analysis of the research designs of these three projects would be very useful for future designers of studies and for funding committees.

'Sin in science is to use a poor method when there is a better one available to answer your questions' according to John E. Anderson, a developmental psychologist and a teacher who influenced my career. In our small country with limited research resources we must make the most of our funds by paying attention to good research designs which specify the questions to be answered, and describe how the procedures to be used will secure answers to those questions. The longitudinal methodology of the Dunedin project was the methodology used in Child Developmental studies from 1920 - 1950 in USA, rediscovered in Britain in the 1960's. The New Zealand study was set up in the 1970's, by which time its weaknesses were fully described in the literature of Developmental Psychology. In Campbell and Stanley's (1966) work there was enough guidance for me to refine the longitudinal approach in two projects during the 1960's. By the 1970's the first cross-lagged design in New Zealand research was reported (Clay, 1970). Before long Schaie (1976), Nesselroade and Baltes (1974) were in print over the revisions needed in developmental research designs. Straight longitudinal designs are methodologically flawed. They confound age with cohort differences, and age with testing and instrumentation effects (Baltes, Reese and Nesselroade, 1977). To ensure thorough preparation of research projects money will be well spent in paying consultants to work on research designs. I doubt whether we can afford to spend our meagre resources on projects which virtually say 'We will start this programme of testing and see what comes out of it.'

The three projects discussed above have been expensive, drawing large amounts from Foundation grants. Probably there are some lessons for psychologists in them. Can we improve our research proposals? We should use our colleagues as critics and shape up better grant applications.

Visitors and Expatriates

Many of the authors who have written about Child Development in our country live overseas. Some came to New Zealand to study us (Landreth, Smart and Smart, Mercurio, Ausubel, Havighurst) and others went to work or study abroad (Brown, Boshier, Vellekoop, Sutton-Smith). The message is 'If you stay in New Zealand you will not publish significant work on Child Development' and the variables involved in that issues are worth some thought.

I think it would be appropriate to confess my own expatriate inspirations. From a New Zealand academic training I went on an externally provided scholarship to the USA. A series of happy chances saw me enrolled for postgraduate study at the historic Institute for Child Study at the University of Minnesota, one of five such institutes set up with Rockefeller funds to study children in the mid-1920's. Minnesota produced Florence Goodenough and Dale Harris, John Flavell and John Masters. Toronto trained Mary Ainsworth. Iowa gave Lewin a home, produced the Barker/Wright team and issued the first strong challenge to the constancy of the IQ from Beth Wellman in 1942. California is probably best known for the work of Harold and Mary Cover Jones, Jean MacFarlane and Catherine Landreth, the last an expatriate New Zealander from the Department of Home Science at Otago University. Between these institutes and a few other centres like Gesell's Yale research unit there was a climate of dedication to describing what young children were like. When I arrived at Minnesota in 1951 there had been 25 years of struggle for recognition of this work within the discipline of Psychology. Psychologists had considered this area of work peripheral, easy, rather unimportant, uninteresting, or no different from human functioning at a general and lawful level. I encountered my finest teacher in the Director of the Institute, John E. Anderson who, because of the clarity of his questioning, must be 70 per cent responsible for all the differences of opinion I have with my students and colleagues on issues of theory, methods and the appropriate questions to ask about Child Development.

Minnesota at that time was vehemently against psychodynamic approaches to child psychology which made life difficult for my fellow-students trained in Europe. Cyril Franks, an Englishman, later to be noted for his work in behavioural psychology in Britain and USA, was more comfortable in that data-gathering, statistics-conscious research institute. I was introduced there to the organismic model of developmental psychology. The child was seen as a complex organism in complex interaction with its complex environments. At that time the full impact of criticism of longitudinal studies had not been felt; they were supposed to be the designs that would reveal to us what children were like. Limitations were acknowledged in sampling and in the means of analysing complex data, but not in the research designs.

As early as 1963 Catherine Landreth published a study of 4 year olds' notions about sex appropriateness of parental care and companionship activities. Collecting New Zealand material while on a return visit to New Zealand and comparing it with her American data she reported that children's notions about adult sex roles are obviously culturally conditioned. In Wellington she was able to study children from the homes of both professional and manual workers; in Berkeley she only captured those from professional homes. *This points to a research advantage that exists in New Zealand, relatively easy access to populations.* The children were asked questions like 'Who helps a boy/girl with his/her bath? Who helps you? Who reads a boy/girl a story? Who reads to you?' Girls described mothers as giving care and both parents giving companionship. Boys from manual workers' homes thought the same way. This finding is consistent with the description of the New Zealand 'Fun Father' of pre-school children (Ritchie and Ritchie, 1970). At four years New Zealand boys from professional homes in 1962 said either parent could give both care and companionship. Has there been any shift in the

Landreth variables since the early 1960's? It would have been helpful if, from her baseline, we had had a series of studies over time which plotted any social changes occurring in this important area of parenting behaviours and caring roles.

Such questions point to one of the problems with the visitors' studies: they rarely generate a continuing interest in this country and the topic departs with the visiting researcher. What we can glean from a crop of disparate studies by expatriates is the consistency with which certain findings of more general relevance recur. Landreth found that socioeconomic differences were small in New Zealand. If this is a finding in other comparative studies then perhaps we have located a second major advantage for researchers in this country. *We may be able to carry out research relatively free from the complications of socioeconomic differences.*

L.B. Brown is another example of a New Zealander who has returned, researched, and gone again. After working in social psychology with Osser, Hammond and Taft in Australia, Brown used the *Day at Home* questionnaire with Form II children in two New Zealand studies and compared the results with similar Australian studies. The children were asked who decides about certain family activities and who acts to carry out the decisions. The answers reflect only the children's views of family activities. There are traps in placing too much weight on these findings because the children may be ignorant of what is transacted in the family and their report may reflect a poor sampling of the family's range of activities. Without reviewing both the initial and limited study (1959) and the larger, later study (1970) in detail I want to point up three major findings. Firstly, parents shared activities more in New Zealand than in Australia. Secondly, boys and girls had more similar views of the family than Australian studies showed. Thirdly, in the 1970 study rural and urban children showed very little difference in their descriptions of their families. *The autonomy of New Zealand mothers, and the tendency for boy/girl differences and urban/rural differences to be fewer, or to not appear, should be borne in mind.* If they recur in studies from time to time as they tend to we must take note of the consistency.

And lastly among these excerpts from history, I include Sutton-Smith, an expatriate New Zealander with a flare for the creative and unusual aspects of developmental psychology. He completed his study of the games of New Zealand children in 1952 at Victoria University of Wellington, as our first PhD in

Education, and I think it is to be republished this year, which points both to its quality and to the possibility that if Sutton-Smith has often seemed to be out of step, this may be because he was ahead of the times. His book *Child's Play* is dedicated to those who maintain that there is more than one way to play hopscotch. He discusses developmental changes in children's play, and in particular how they handle and generate rules for play. In a debate with Piaget on play in *Psychological Review* (1966) he maintained that play is an expressive form with its own unique purpose on the human scene and does not occur solely to serve cognition. Play, he said, is tension-enhancing and not merely something in the service of equilibrium. If play contributes anything to intelligence it is probably novel responses. His book with Rosenberg called *The Sibling* has a major focus on the effect siblings have on one another, a fearsomely complicated area because of all the variations on the patterns of siblings that can occur. That book is dedicated in fun to 'Our older siblings who will undoubtedly regard this as just another form of harrassment.' In Sutton-Smith's work the emphases are on divergent thinking, coping with novelty, and aesthetic development. In play the child is able to put things together in novel ways, to achieve a new synthesis, to rehearse strategies in group play, daydreaming and solitary play, to learn vast alphabets of responses, to get ideas going in the head. To play is to generate and to formulate, not merely to project. Play is much more than the puritanic dualism of Work and Play allows. When one considers such avant garde formulations it is little wonder that New Zealand's most published developmental psychologist has spent most of his academic career in USA. Think of our traditional aversion for the 'play way'! But the last comment should be Sutton-Smith's 'What a culture does with empty minds is to stick Red Riding Hoods in.'

Looking at only three expatriate researchers I have noted two major advantages for carrying out research in this country:

1. We have relatively easy access to populations.
2. We are relatively free from the complications of socioeconomic differences found overseas.

In addition we must recognize some consistencies in past research in reporting the autonomy of New Zealand mothers, fewer boy/girl differences and fewer urban/rural differences than studies from other countries report.

Interest in the Psychology of the Maori

Pearl and Ernest Beaglehole were psychologists with international standing who put their interesting studies of the 1930's into a world framework. In the cross-cultural comparisons of Whiting and Child of child-rearing across some 39 cultures New Zealand is represented in terms of the Beagleholdes' descriptions of Maori child-rearing earlier in this century. The Whiting and Child studies led on to a more detailed cross-cultural study of Mothers in Six Cultures, the essence of such effort being to clarify the critical variables in child-rearing by comparing differences in the process of rearing and differences in the outcome in national personality. Cross-cultural research was, until the last decade, personality oriented. It was also psycho-analytically oriented. Many of the studies looked at child-rearing techniques like feeding and weaning practices, toilet-training, dependency and independence, and aggression.

Jane Ritchie (the Beagleholes' daughter) has, with her husband James Ritchie, contributed to the updating of the study of the Maori in the second part of this century. There were three studies of Maoris in Rakau, a timber town, somewhere in the Bay of Plenty area. There were studies of pre-school, primary school, and adolescent groups, and an integrating volume by James Ritchie on the Maori personality, and how it related to the childhood variables described in the earlier studies. This set of researches fits well into the conceptual framework that child-rearing variables contribute to understanding the emergence of adult personality types. There is also a large measure of psychoanalytic theory in that report.

In the 1950's Sears, Maccoby and Levin made a study of New England mothers in USA, published in *Patterns of Child Rearing.* This study has been replicated in New Zealand by the Ritchies. There is no scientific report. To meet publication needs in New Zealand they produced a popular book which avoids the detail of sample, design and analysis. As far as can be ascertained it was a careful replication of method but the sampling is questionable on several grounds. So too, the tendency to mix scientific report with interpretation, and with guidance towards certain practices for the mothers who read the book. It is done in a light-handed way but done nonetheless. These three aims - scientific report, interpretation and guidance - cannot be handled well together, and that will continue to be a publication dilemma in this country.

From there my account could go in two directions: one would take us through a few studies on families and the kinds of experiences they provide (Smart and Smart, 1973, 1976; Webster, 1979; Clay and Robinson, 1978), and the other would review a large number of studies comparing Pakeha and Polynesian. Turning to this latter topic I will direct your attention to two collections of studies and one review. Vaughan collected together studies on *Racial Issues in New Zealand* (1972) and Bray and Hill (1974) edited two volumes of *Pakeha and Polynesian.* Last year a chapter appeared in a book co-authored by an expatriate New Zealander, Bernard Spolsky (1978), on bilingualism. Benton wrote an excellent overview of the problems and prospects for indigenous languages and bilingual education in New Zealand and Oceania. Such coverage makes it a little easier for the developmental psychologist to determine some of the variables he needs in his research designs. The linguistic survey of the New Zealand Council for Educational Research, nearing completion, represents another type of background data to be consulted by the designers of studies. And one of the most penetrating analyses of methodological issues in this area came from McDonald (1976) discussing who is a Maori and questions to be asked about the selections of samples.

Most of this research has been in a cross-cultural comparative mode. Bowing to the insistence of some Maoris that they should be considered as and for themselves we may see, in the future, studies of change over time in the development of Maori children in a non-comparative manner, hopefully by own-group researchers.

Programmes of Research

We have three bodies of sound, progressive developmental research which I want to direct attention to. It is good quality, aligned to the methodologies and questions of the discipline, pursued with scientific integrity, published for whatever rebuttal is necessary, and sensitive to cultural variables that are indigenous.

Nicholls (1975) studied the children's understanding of factors which determine achievement here in New Zealand. Children of five years saw difficult tasks simply as tasks where success is unlikely. Adults and older children valued difficult tasks more highly than easy tasks because they saw success on difficult tasks as providing evidence of ability or effort. As the child got older effort was increasingly seen as sufficient to account for success and lack of effort for failure. Luck was increasingly discounted. Where effort was not a plausible cause luck was seen increasingly as a cause of success. Nicholls mapped the age changes that occur in these concepts, recording sex and ethnic differences.

In three studies of 10 to 11 year old children comparing boys and girls with similar attainment levels Nicholls (1979) found that girls tended to be self-derogatory about ability:

1. They attributed failure to poor ability rather than lack of effort or luck.
2. They were less likely than boys to use a concept of ability to explain success, but they saw effort as a more likely cause of success than boys did.

There is an interesting shift with age in the Maori and Pakeha groups. Both Maori and Pakeha children at the younger ages were influenced by a stereotype of Maoris as less able. They were less inclined to attribute success to high ability when the child succeeding was a Maori than when the child was a Pakeha. In contrast 13 and 14 year old students gave explanations of academic success and failure that did not differ for Maori and Pakeha students of similar attainment levels. There was no evidence in that group for assuming that Maori pupils were more likely than Pakehas to have low perceptions of their academic performance or to be self-derogatory in explaining academic outcomes.

That body of research conducted over several years has described the parameters, has sketched the developmental picture. John Nicholls received positive reinforcement for the qualities of his work outside this country and now works in the USA.

Graham Vaughan has also followed a particular theme, ethnic awareness and attitude, through a number of studies, over a period of years, and through a possible change in society's attitudes. Between 1961 and 1970 twelve hundred Maori and Pakeha children ranging from 5 to 12 years were tested by Vaughan and his research students for intergroup preferences. Results showed an early development of ethnic awareness at 5 to 6 years with a preference for friends among the majority group in young children of both ethnic groups but by the upper primary school ages, 10 to 14 years, the Maori group had shifted to showing an own-group preference. In an analysis of shifts that may have occurred over the 1961 to 1970 period Vaughan suggests that in recent years Maori children have been showing an increasing preference for their own ethnic group and that the blatant in-group preference of older Pakeha children aged 9 to 12 years has weakened, probably as a facet of social change. He considers that the shift in Maori preferences has been influenced by increasing urbanization and awareness of minority group assertions in other countries.

Another body of research is accumulating from the research activities of Thomas at the University of Waikato. He has conducted a large number of studies of ethnic differences in a social or cross-cultural psychology mode rather than attending to developmental change. In one of his studies he reported that urban Maori children in Form II did not directly seek help from teachers in the way that Pakeha children did in three different settings - individual, group and classroom. They showed non-verbal behaviours like facial expressions of appeal, making noises, and head scratching when Pakeha children would ask directly for help or look at the teacher. He relates this to cultural training which involves Maori children in having to wait until noticed by a parent or other adult (McKessor and Thomas, 1973). Thomas has also found that urban Maori children showed extremely competitive behaviour in a study of co-operation and competition. The Ritchies suggest that the implications of this are grave since we know a considerable number of these children tend to end up losers. They ask: 'What will happen to a highly competitive person who finds himself or herself constantly and unfairly losing?' (Thomas, 1975).

Learning from Reporting

The problems in society tend to attract research funds. The study of juvenile offending should not be allowed to slip into history in the New Zealand research on child development. It was a prediction study, taking a cohort of children as 10 year olds, gathering data on them, locating those who offended, and tracing the predictor variables in the original observations that were related to the offending outcomes. Conceptually that was up-to-date methodology at the time it was generated though better designs would now be available. The statistical integrity of the programme was never in question, and the report of the ethical problems of data-sharing among several government departments and a University provides an impeccable model. Some of the problems which the projected research faced were obvious at the outset. One was that no developmental psychologist was included in the team. The study probably began too late, starting with 10 year olds. Offenders at that age were perhaps already testing the limits of society in small but calculated ways. Secondly, teachers were to supply the data on the children, and their knowledge while extensive over time, and for types of children, would be limited to certain settings and would give a partial picture of the child's range of responses. There were other problems, not the least of which were the problems with the main instrument used, the *Bristol Adjustment Guide*. There are five reports, and in them some excellent pointers to the future designers of research in this area. Most of it suggests what not do do, but that is important guidance.

The reports were subjected to a thorough review by Braithwaite (1977) which I consider to be the essential reading on this whole project. We are polite in our reviewing in a way that tends not to be progressive in its profit for further research. While I see little point in a sabre-swipe type of review for the sake of establishing one's own image as a critic, I think we could contribute more to the ongoing field of child research in this country by reviewing bodies of research in forward-looking ways:

1. We must have better literature surveys, particularly of local literature, noticing recurrent emphases in New Zealand findings.
2. We must monitor recent developments from overseas keeping our procedures and statistics up-to-date.
3. We need to improve our reporting habits, making quality results available locally.
4. We need to encourage extensive but constructive reviewing.

Adolescent Studies

From the strength of the foregoing programmes of work I must return to less satisfactory ground. I have reviewed one of Stewart's (1976) two volumes of adolescent research (Clay, 1976), and wish to reiterate some points I made in that review.

I would endorse the editor's rationale:

> New Zealanders are very interested in their young people but too often unfortunately they have had to rely on discursive and impressionistic comment. Also, much of it has been based on overseas material, which although often illuminating does need to be tested for applicability in New Zealand. For wise national

> and personal decisions to be made such concrete factual material as is available in New Zealand must be marshalled and made more accessible. This is the goal of these volumes.
>
> (Stewart, 1976)

One would hope that this publication will startle us into the realization that we know very little at the descriptive level and almost nothing at the explanatory level about the factors influencing our young New Zealanders in that cultural finishing school of adolescent experience.

In a recent survey of adolescent psychology L'Abate (1971) claimed that the field contained few satisfactory research projects, few publications and few specialists compared with other periods of childhood. In New Zealand we have carried that trend to an extreme of neglect.

A most valuable chapter is the review of research since 1950 (Broadley, McMorland, Stewart) and it will undoubtedly be used as a reference source.

Several studies on school influences make a useful contribution. The comparison of Day Boys and Hostel Boys and their spare time activities shows that the boys' lives differed in ways that controlled their opportunities and interests over four years at school and in the careful reporting of results it is easy to see what is lost upon the roundabouts and what is gained upon the swings. Mercurio's work on corporal punishment is an example of a different but effective approach to research with careful observation of the complex variables operating within one school.

A comparison of the Baldock and Ballard articles is interesting. From a sociological framework Baldock concludes that the New Zealand school system is unable to erase the social class background of the students with the implication that we ought to, and have therefore failed or that we are inconsistent if we claim to believe in equality of educational opportunity. Ballard makes a psychological analysis of parent, teacher and peer expectation and their effects and aspiration which approaches closer to explanatory interpretation of some of the variables in Baldock's problem than her research design could hope to do.

The Keeling and Nuthall study of values, sound in sample, technique and interpretation, reports age, sex and ability differences among 682 third and fifth formers drawn from 10 high schools. The findings suggests some directions of change in the personal value structure of adolescents as they get older. There is a particular value in such careful research because it provides a base from which further research can be generated.

Because there have been so few studies undertaken an editor is bound to take some leaps of interpretation in cross-relating results but this should be attempted with all due care. In Stewart's editorial comment it is suggested that single-sex schools bear a causative relationship to the fact that Youthline has many calls about boy/girl relationships! Isn't it possible that this emphasis arises because these are a focal adolescent concern? Stewart claims that qualities of critical thought, imaginative leadership and willingness to live with change are not the products of authoritarianism. Firstly they could be, in reactive adjustment, which adolescents achieve rather easily. It is unwise to underestimate the flexibility and the search for change that swells in the heart of the young. Secondly, hypotheses in adolescent research must not be generated in pop psychology or sociology like 'the facile ideas which sweep through a self-conscious culture from time to time' (Adelson, 1970). Although the family and school may emphasize control in duet, the wider community and the events of the times are crucial in shaping the fledgling's identity at 16 - 20 years. (Keeling & Nuthall's report suggests this.) For example the morality and value systems of today's youth will more probably be shaped by and, sharpened on, the issues of the All Black Tours, the Olympic Games, the Muldoon image, and the economic climate than by the family and school atmospheres which they have learned to live with or to ignore. This is not a defense of authoritarian ways. It is a plea against false, oversimplified hypotheses about young people and what effects them. It expresses my preference for the Ballard over the Baldock approach, and for Havighurst's understanding that the New Zealand family could at the one time be more authoritarian and yet have warmer interpersonal relationships than the American families he studied. The sensitivity of adolescent behaviour to cultural change and contemporary emphases almost defeats the psychologist because before he gets his research designed or his data analysed the adolescent trend has branched off in a new direction responding to signals in current events that are barely detectable (Nesselroade and Baltes, 1974).

With some sense of desperation I turned in 1978 to a very comprehensive study of 12 year olds. As part of a contract to the Department of Education for the study of Form II children last year we undertook to review knowledge of New Zealand children who were at that age level. We called our chapter 'Islands of Information' and grouped what is known under these headings:

1. Physical growth data.
2. Ethnic factors.
3. Home and sibling factors.
4. Sex-role factors.
5. Peer relationships.
6. School factors.
7. Activities and opportunities.
8. Social sanctions and minor delinquencies.
9. Studies of work and vocational interests.
10. Images of self.

Taking into account the review of literature and some of the things that our twelve year olds told us in the surveys we concluded that there are some interesting studies to be done on peer group interactions and what they contribute to a child's development. The popular image of peers and their influences was shattered by our clear result that peers are seen to be the most controlling and disciplining folk around the child. In the area of self-concept the *Self and Parents* scale yielded the highest ratings for feelings about self, while on the *Self and Peers* scale the ratings were lower. Another interesting fact was that boys in one-adult families had lower self-concepts in relation to peers than all other children. Does the peer group give boys without fathers a hard time? It is not the same for girls in this position according to our children. Bronfenbrenner believes that strongly peer-oriented adolescents are likely to hold negative views of themselves and their peer group. He concludes that the peer-oriented child is more a product of parent disregard than of the peer group, that he turns to his peer group less by choice than by default. The vacuum left by the withdrawal of parents and by adults from the lives of children is filled with an undesired and possibly undesirable age segregated peer group. As this issue has particular relevance for some groups in New Zealand we would gain ground if we knew more about the credits and debits of peer group associations and interactions.

Towards a Stronger Research Base in New Zealand Child Development Research

From recent reviews of child development research overseas we can identify the gaps and weaknesses, and by searching the new publications we can appreciate the current questions and criticisms in the field. Time and money devoted to the analyses of local knowledge, and to consultation with colleagues within and beyond one's discipline would be well spent prior to designing research. Critical and constructive reviewing of research proposals, and of published reports, will strengthen the field. Visitors and expatriates are not the purveyors of solutions but provide a stimulus to us to ask our own questions about our children in our own society. We could give more thought to using these visitors in ways which will have generative effects on research activity. And we must be wise in our choices of projects and methods because our opportunities to do research will be limited by the size of the talent pool and the financial resources.

A supporting body of student research will emerge from courses which critically examine the theoretical arguments behind developmental issues. So I should turn, finally to some of these issues.

At the University of Minnesota I was introduced to an organismic model in developmental psychology that predated later shifts 1) to antecedent-consequent research, 2) to behavioural analysis, and 3) more recently to the analysis of environments and contexts with anthropological-type methods. What is the organismic model's status today? The model stems from natural science rather than physical science. The basic metaphor is that of a living organism, an organized whole, in continuous transition from one state to another. The organism is inherently and spontaneously active; it is a source of acts. Change is a given in this model. The organism is a system and in that system the parts and the configuration of the parts change. Interactions occur between various parts of sub-systems of the organism or between the organism, its subsystems and the environment. These interactions would have weak effects over short periods of time, (for example in the learning experiment) and be strong over long periods of time.

An organismic view holds to reciprocal causation, one of the many complexities that the developmentalist is reluctant to simplify. The organismic psychologist tries to explain the organized complexity of the organism and the ordered changes that occur in systems. Linear change is not something the organismic model finds sufficient. Many types of multiple progressions can be sketched in cumulative models (Van Den Daele, 1969). From one position children who are the same may take many different routes. From different positions they may reach a similar state. We find it hard to think of children who have learned slipping backwards in achievement yet our best example of this is often in our own experience with learning a foreign language.

Views such as these lead developmental psychologists to ask the kinds of questions that statistical analyses cannot handle, relating to change over time. One has the option of tailoring one's questions to the available techniques or asking the questions for which answers are needed and having doubts expressed about the analysis procedures.

Developmentalists are interested in the external agent, the antecedent condition or the independent variable which moves or changes the organism (what Overton and Reese call efficient causes) but they are also interested in a limited range of motivational factors (material causes), in the pattern, organization or form of the psychological structures (formal causes) and the end towards which the organism develops such as hierarchical orders, processes of differentiation and integration (final causes).

This organismic model has been central to my own work on early reading. In my first study the longitudinal approach was modified to overcome some of the then-current criticisms by shortening the time-span between observations to weekly intervals. On-task behaviour was the basic data; test-scores were only a secondary source of descriptive data. Two cohorts were used, 1963 and 1964 although it was not finally appropriate to analyse their results separately. It was assumed that children would differ in their response repertoires on entry to school and would take divergent routes in response to programmes. The research design, aimed at describing what occurred had to allow for diverging developmental sequences. Interpretations were made following the plotting of diversity, in an attempt to account for what occurred. These have been subjected to further tests in subsequent studies.

The Maori Education Foundation study (Clay, 1970) reflected my reading of Campbell and Stanley (1966) and in particular their discussion of the institutional cycle design. New cohorts of subjects entering a programme at paced intervals can provide tests of time and age variables. I experimented with this in another type of longitudinal design. Data-gathering lasted six months. However by starting with five age groups, 5:0, 5:6, 6:0, 6:6 and 7:0, and following each as a separate group over six months I had a cross-sectional description of 5:0 - 7:0 year olds and could compare two samples at each of five ages. I had greater control over my data in this design, although I was not clearly aware of the many advantages described a few years later by Nesselroade and Baltes (1974) or Baltes, Reese and Nesselroade (1978) for the cross-lagged design.

Some of the advantages that exist for child development researchers in New Zealand (such as access to populations, potential for follow-up, and fewer group differences) have particular value when one attempts to study change over time in children's responses. Some of the 'noisy' variables are quietened.

According to Blampied (1978) a psychologist visiting this country recently remarked that there were more disciples of Skinner per capita in New Zealand than anywhere else on earth. Psychology departments have had a strong publication record in the *Journal of Experimental Analysis of Behaviour*. Parallel with this work there has been a steady rise of influence and effectiveness of Behaviour Analysis in New Zealand with particular strengths in Education Departments and much credit to Ted Glynn in Auckland and John Church at Canterbury. Overton and Reese (1973) maintain that the mechanistic model used in Behaviour Analysis assumes a reactive organism. The organism becomes active only as a result of external forces. One searches for material and efficient causes and studies uni-directional trends and linear causality. Causes are seen as external and efficient and occurring perhaps in chain-like sequences. In principle, complete prediction is possible. This model takes a close-up focus on what occurs: it pays attention to antecedent relationships and consequent events in such short time spans that a functional relationship can be assumed. It pays attention to the human and physical environment as part of the research data-collection. More complex sets of interactions can be studied such as agent action, organism response, reinforcement by the agent, and organism reinforcement of the agent.

I do not believe that it is merely chance that three Education Departments in this country which had strong Developmental Psychology courses in Education have also developed, subsequently, strong interests in Applied Behaviour Analysis. According to most discussions these two emphases should be in conflict stemming from different world views or metaphysical models and being categorically incompatible. Yet in practical day to day research work these approaches are now very close together. Most features of applied behaviour analysis research are completely compatible with the frameworks of organismic psychology, but for two limiting conditions. It gives priority to efficient causes, and to functional relationships.

O'Rourke (1978) provides an illustration of the closeness of current methodologies in applied behaviour analysis and developmental psychology. A detailed analysis of behaviour in its context is the starting point of her research. Description precedes manipulation. She made an analysis of intermediate children's playground behaviour over the period of a year. Children's participation in play and the amount of inappropriate behaviour was observed. Then increased supplies of moveable equipment, static equipment and adults participating in the play were introduced. The first step in this research was to describe what occurred in the playground by detailed tallying procedures. Then a manipulation was introduced and its effects were tallied. The overall level of participation was studied (it increased) and the level of inappropriate behaviour (it decreased). The long-term nature of the study made it possible to say that the introduction of moveable equipment had a temporary effect, and a continuing supply of novel moveable equipment may be necessary to maintain participation. The provision of static equipment such as volley-ball, cricket, hockey and padder tennis maintained high rates of participation and low rates of inappropriate behaviour if the equipment was available early in the play period. The introduction of more participating adults attracted increased numbers of children to those zones, produced high stable rates of participation and maintained low stable rates of inappropriate behaviour. There are implications for communities and schools wishing to provide recreation facilities for children of this age. Static equipment will probably be used; new resources should be added from time to time, and adult participation increased child participation.

This study demonstrates the methodological advances that have been made in research design in this country. Play was the topic, a theme in New Zealand research that runs from Sutton-Smith through the pre-school research on play to the activities studies of how children spent their leisure. Behaviour analysis was the data-gathering technique used to discover what happens in a natural environment - in a sense describing the parameters of the behaviour and the environment, and over a long stretch of time. With a beautiful orchestration of controls over this natural environment O'Rourke then continued her observation of the functional effects of 1) experimental manipulations and 2) natural manipulations introduced by the educational shifts in games and sports that occurs on rather fixed timetables. If developmental research is interested in the study of change over time, as I maintain, this must be the most controlled study of such change that I know. Yet it is not a developmental study. It did not address itself to the question of change in individuals over time as Behavioural Analysis studies usually do. Given the complexity O'Rourke disciplined it must be entirely within the bounds of possibility to use this model for a developmental study, monitoring how individuals change. The one problem that remains centres around the two views of prediction. In principle complete prediction is possible in Behavioural

Analysis studies, while in the organismic model divergent responses to learning opportunities are not only predicted but are also probably desirable (for the creative, play and novel responses to emerge). If one is to plot divergent responses to a set of opportunities it is necessary to study a fairly large number of subjects. This has been difficult to achieve in applied behavioural analysis designs. O'Rourke may have provided some guidance to the solution to this problem.

The issue is not one of conflicting world views, but is a matter of the questions we want answered. They must determine our selection of research strategies.

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Research on the Education of Maori Children

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In tackling the task of reviewing the research literature, no attempt will be made to provide detailed summaries of individual research projects, rather findings will be integrated under topic areas, and used to highlight some of the assumptions that are made about 'Maori Education", and methodological (state of the art) issues. The topic areas into which the review of research has been divided are as follows:

1. Historical Studies.
2. Language Studies.
3. Scholastic Achievement Studies:
    (i) Attitudinal Studies.
    (ii) Intellectual Development and Assessment.
    (iii) Social Factors.
    (iv) School Factors.

Then follows a section highlighting methodological issues, and finally a concluding section in which some general issues are raised. The research reviewed covers the period 1971 to 79.

1. Historical Studies

There is no comprehensive history of ethnic groups and education in New Zealand, but we do have a good history of the relationships between

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the Maori population and the European introduced institution of schooling. This work (Barrington and Beaglehole, 1974) covers the whole span from earliest contact to the 1960's, providing a wealth of factual material on the evolving relationship between Maori and Pakeha, particularly as it affected schooling. From a methodological viewpoint the work has received some critical attention. McKenzie (1975) suggests that the authors stay too close to the facts, and that the broad sweep of developments does not become obvious. McKenzie attributes this difficulty to the fact that the book is the result of two independent research theses, completed some considerable time before its publication (8 and 19 years respectively). He goes on to suggest that theses are better used as source material than as preliminary drafts for a book. While accepting the criticism in this case we feel bound to suggest that the whole institutional context in which educational research has been conducted in New Zealand until quite recently (particularly historical research) is largely responsible for this state of affairs rather than these specific authors.

A further methodological point is made in another review of the Barrington and Beaglehole book (Bray, 1976) in which it is suggested that there is a need for more material from Maori sources, such as autobiographies. This is an important point, and it suggests that a high priority for historians of education should be the collection of oral histories from people of all ethnic groups (including Pakehas) who have passed through the schools. Fitzgerald (1977), an anthropologist, has collected such data as part of his fieldwork investigating the identity status of Maori graduates. Summaries of long interviews with 11 graduates are presented in Chapter 4 of his book and provide for Pakehas a perhaps unrecognizable view of the New Zealand education system - unrecognizable because it is seen from an unfamiliar perspective. The interview materials also show how aspects of the education system taken as routine and unproblematic by Pakehas, can be seen as major barriers from another cultural perspective. The wider collection of such materials should provide valuable insights into the effectiveness of the policies and enactments which are, by and large, so well documented.

What we appear to lack in this area is a comprehensive social history of the relationships between Maori, Pakeha and the educational system. Various pieces of such a history are available to us, but the picture is far from complete. Ramsay (1972) in a brief survey indicates the way the beliefs and attitudes of policy makers, together with pressure from influential groups and individuals have affected the emphasis given to Maori culture and language in the school curriculum. Fitzgerald (1977) devotes a chapter to the first generation of Maori graduates in which some of the social pressures that were at work within Maori society can be perceived and of which we should know more to complement the social, political and economic material we have on the Pakeha world. Butterworth (1973) provides some interesting material for the period 1930 to 1960, outlining the influences of Sir Apirana Ngata, the Ratana movement, the Labour Government and the rapid urbanization that took place after 1945. From a philosophical perspective, Whitehead (1973) has examined the historical literature in an attempt to educe the unstated assumptions upon which Maori education has been based. He finds that until very recently the assumption of Europeanization has changed little since the Native Trust Ordinance of 1844, and that the change of policy from 'assimilation' to 'integration' was largely rhetorical and did not alter the underlying Europeanization.

2. Language Studies

The dominant force in this area of study is the Maori Research Unit of the New Zealand Council for Educational Research under the direction of Richard Benton. This group have completed what must be one of the largest social surveys ever undertaken in New Zealand, a sociolinguistic census of Maori households in the North Island. Initial results have been reported in Benton (1979a, 1979d) where one can find an answer to the question 'Who speaks Maori?' This answer is:

1. Most Maoris over 25 in Northland, Bay of Plenty and the East Coast.
2. Most Maoris over 45 in most parts of the North Island.
3. A few young people and children in some places; and
4. Most children and young people in a very small number of rural areas.

Further, Benton estimates that about 70,000 can speak conversational Maori, and a further 115,000 are able to understand it with ease. But he warns that there is likely to be a rapid decrease in these numbers as half of the Maori population are under 15, and only 15 per cent of that age group are able to speak Maori. Conversely, those over 45 account for nearly 40 per cent of Maori speakers, but are only 12 per cent of the Maori population. With these data to hand, Benton's arguments for bilingual education take on greater import and urgency. Benton (1979b) reviews the beginnings of bilingual schooling at Ruatoki, where Maori is the major teaching medium for the first two or three years, and retains equal status with English at the upper levels. Bilingual developments at Fernhill school in the Hawkes Bay are also discussed as well as future plans in other schools, and some of the problems that arise. An integral part of these studies is the extensive consultation with parents which is seen as an essential component of such developments - see for example Montgomery (1979), who surveyed the parents at a private primary school (90 per cent Pakeha) in the Hastings area and found that 65 per cent of those who responded (108 out of 132) were in favour of teaching Maori, while 44 per cent supported in principle a bilingual programme at the school. While the school's parents cannot be considered representative of New Zealand as a whole, this survey may be indicative of a shift in public opinion over a relatively short period of time. It is also a good example of the necessary consultation and groundwork which must be undertaken if any kind of innovation is to be introduced in a school - or into schools in general.

The reasons advanced for bilingual education (Benton, 1976, 1979b) depend on the particular circumstances of each school. Bilingual programmes can be used for:

1. Language maintenance (Ruatoki).
2. Language revival (Fernhill).
3. The maintenance of diversity and as a national symbol (system-wide).

The policy implications of taking the bilingual option seriously are immense - indeed they represent 'a major political initiative' (Benton, 1979c : 9).

The policy changes needed to implement genuine bilingual curricula in New Zealand schools are discussed by Benton (Ibid) in some detail. He points out that they go beyond the sphere of education into those of social attitudes and politics. In fact, New Zealand society must go far beyond the rhetoric of multi-culturalism (at which we have few peers in the world) and give substance to our fine words, particularly if it is conceded that what is applicable to the Maori language must also be applicable to Samoan, Dutch, Greek and so on.

A history of Maori language teaching in New Zealand secondary schools is to be found in Devlin (1974), who also carried out a survey of all the secondary schools in 1973 and found that half were not offering (or intending to) either Maori language or Maori studies components in their programmes.

A further group of studies are concerned with the use of the English language by Maoris. McDonald (1977a) undertook a componential analysis of the meanings of spatial adjectives imputed by Maori and Pakeha four year olds. She found that the order of acquisition was the same for both groups, and that there was little difference on word recognition or comprehension. The suggestion is made, none-the-less, that some word meaning differences do exist between Maori and Pakeha (p.338). She found no evidence of 'deficits' or 'differences' in ways of thinking - no *Sapir-Whorf* effect (though none of her Maori sample were Maori speakers). Age was a critical variable for both groups, while SES was critical only for Pakehas. McDonald's comments on 'deficit' theories of 'Maori English' are strongly echoed by Hawkins (1972) who mounts a vigorous attack on the 'cultural deprivation' hypothesis evident in some Departmental publications of the late 60's. McCallum (1978) also rejects a 'deficit' model in her research on the English language usage of Maori and Pakeha Standard 2 pupils. She recorded the spoken English of a variety of children and analyzed the verb forms, finding significant differences between Maori and Pakeha groups (no within ethnic group differences). However, she points out that both Maori groups (an urban, English only speaking group and a rural Maori speaking group) were producing between 84 and 90 per cent standard English verb forms '... scarcely convincing evidence of the development of a separated potentially stable dialect'. (Ibid, p.142).

For a more extensive review of research studies of the linguistic competencies of Maori and other Polynesian children in New Zealand see St. George (1980), who approaches the area not only from the point of view of English language competence, but also from the bilingual perspective, reviewing competencies in Maori and the implications for schooling and schools.

3. Scholastic Achievement Studies

The New Zealand Education Department in its annual report to Parliament provide basic data from their annual returns from schools. The far more informative and useful *Education Statistics of New Zealand* appears to have been one of the victims of financial constraints as the last one appeared in 1977 with the data for 1976. It is a pity that this most useful document does not have a higher priority. However, it is from such annual returns to the Education Department that the basic parameters of the poorer school performance of Maori pupils relative to their Pakeha peers become evident. Pass rates in the national public examinations, the figures on school leaving, enrolment ratios at various levels of the education system and many more are to be found there. It is the attempt to account for the differences observable in these parameters that is the particular concern of the research reported on here.

The most often quoted research study in this area is that of Lovegrove (1966) who reported 'that Maori and European children from almost comparable home backgrounds performed similarly on tests of scholastic achievement'. However, there are a number of methodological flaws in the study which make such a conclusion from his data somewhat insecure (see Harker 1976a, pp.6-12 for a detailed critique). Harker (1978) using a large sample drawn mainly from the Wanganui Board area (and hence overly rural and unbalanced with regard to SES), found that such environmental variables as SES, family size and rural-urban location are related to both school achievement and ethnicity, and further, that controlling for such variables, while reducing the variance accounted for by ethnicity, did not entirely eliminate it, particularly on test criteria (*PAT* and *Ravens*). Maori-Pakeha differences on a variety of school achievement criteria are reported in a number of other studies, Kerr (1971), Codd (1972). Peddie (1974) presents a good, concise historical review of achievement studies, and an informative discussion of the problems of interpreting statistical and census data. Olsen's (1972) longitudinal study of early school leavers at two rural and two urban central districts secondary schools found that Maori pupils were three times more likely than Pakeha to be early leavers. Interestingly he found fewer differences between the Maori leavers and non-leavers than for Pakehas. For example, there was no difference in non-verbal IQ between the two Maori groups, unlike the Pakeha. Other researchers (McDonald (1975), Harker (1978) in Education and Kinloch (1979) in Child Health) have also noted that some environmental variables (most notably SES) known to be associated with achievement and health measures for children of European cultures do not relate in the same way to the achievement scores of Maori and Polynesian children.

The complex of relationships between health, ethnic origin and school achievement have received increased attention in the past decade. Prior (1974) and Tonkin (1974) outline the main dimensions of the problems involved, provide useful statistical material and review a number of ongoing studies. An ex-post facto study by Wright (1978) on 124 Maori and non-Maori five year olds provided some interesting data from an extensive battery of medical and health tests as well as cognitive and perceptual tests. Unfortunately however, the findings are presented as two parallel sets of data (both of which are very interesting, particularly the health data on vision and hearing) and while it is clear that poor health could well affect school performance, it is not demonstrated with the data in Wright's study which could have been subjected to multi-variate analysis.

In summary then it is clear that there are a number of environmental variables which relate to ethnicity on the one hand and to school achievement on the other. In most cases these environmental variables exacerbate the achievement differences between Maori and Pakeha - at the statistical level Maoris tend to have more child health problems, larger families, to live in more depressed areas with poorer schooling environments and lower social status in the community. However, in the studies where such factors have been taken into account (admittedly no study has taken *all* of them into account simultaneously) there is usually still some variance left to ethnicity, which points to the probability that cultural difference itself (the difference between the culture of the child's home and community, and the culture inherent in the curriculum, organization and teaching methods of the school) is an independent causal factor in the lower achievement of Maori children in New Zealand schools.

3(i) Attitudinal Studies

This is a mixed category including skills, values and some personality factors as well as attitudes. The studies are considered under two headings: Pakeha attitudes toward Maoris; and Maori attitudes, skills, values and personality factors viewed from the perspective of Pakeha norms.

Pakeha Attitudes toward Maoris

Nightingale (1977) set out to test Walker's statement 'that teachers are predominantly monocultural and not sensitized to react to biculturalism or the minority group needs of Maori pupils'. He studied four aspects: attitudes to biculturalism; seeking to understand through experience; knowledge of the educational problems of Maori pupils; and knowledge of Maori terms and practices. His sample of teachers in Taranaki and Hawkes Bay lends some empirical support to Walker's contention.

Whatever teachers think and know of Maori culture, does not necessarily relate to the way Maori children are treated in classrooms. A. St. George (1978) carried out a naturalistic observational study to explore the way teachers expectations relate to their perceptions of other pupil attributes including ethnic group. Her findings were that teachers held different expectations for and perceptions of Polynesian and Pakeha pupils which reflected the achievement differences. There were no differences between Maori and Pakeha children in terms of teacher-pupil interaction and teachers did not treat pupils for whom they held low expectations in what could be judged a negative way. The lack of findings indicative of teacher discrimination is supported by Harker (1978) who found no bias by teachers against Maori pupils in their annual ratings of achievement. The findings of Nicholls and Barnett (1977, Study 2) would also indicate that teachers do not systematically practice racial discrimination or differentiation in New Zealand schools.

Bray and Jordan (1976) set out to examine the attitudes of Teachers College students toward the education of Maoris. The methodology employed however, is rather opaque, and insufficient rationale is given to properly interpret the findings, from which the authors draw somewhat banale conclusions (e.g., 'attitudes may vary according to degree of personal involvement' p.58). Stewart (1974), in a well designed study failed to find any effect on the attitudes of third year teacher trainees of a course in Maori Studies. However, pre-test attitudes were highly favourable for all groups, hence little change could be expected. He noted that the low scorers on the pre-test made the most gains, which may simply reflect the 'regression to the mean' phenomenon, or be a result of peer pressure.

Maori Attitudes

The research in this section is grouped into four topics: Ethnic awareness; Classroom behaviour; Friendship patterns; and Future time perspective.

Ethnic awareness has been studied by Awatere (1974) who replicated Vaughan's well known studies of the early 1960's. Results were similar with one exception:

> The striking difference between this study and (those of Vaughan and Hills) is the much greater preference of the Maori figures by both races. This more favourable attitude to the Maori figures persists across the entire age range.
>
> (Ibid, p.36)

The Maori children identify with the Pakeha dolls up to age ten when a changeover occurs which is also reflected in attitudes. In Awatere's study, these ethnic choices were made at a much younger age than in Vaughan's original study.

Quinnell (1974) review the various general issues underlying the cultural and ethnic differences contained within the social milieu of classrooms and some of the methodological issues that are entailed. His observational study found that the children studied tended to differentially interact with their peers according to racial grouping, the Maori children being more ethnically gregarious and less separatist in their classroom peer interactions (p.161). Another finding of Quinnell's was that there was no difference between Maori and Pakeha in initiating or responding to teacher attention (p.169). However, McKessar and Thomas (1978) report three studies showing that urban Maori children are less likely than Pakeha children to ask the teacher directly for help, and more likely to give what the authors interpret as help-seeking, non-verbal signals. These findings are not supported by the observations of A. St. George (1978). Another interesting aspect of classroom behaviour is the work of Denee (1972) whose observational studies in an Auckland play centre led her to develop models of inclusive and exclusive modes of interaction, finding the former associated with Polynesians and the latter with Pakehas. Adding to these findings from other studies Graves (1974) reports the effect the proportion of Polynesians on the school roll had on the modes of interaction; as the proportion increases, the Pakeha children exhibit increasing exclusive behaviour, while Polynesian children show an increase in inclusive behaviour. Graves draws some interesting pedagogical conclusions based around the different teaching/learning styles inherent in the two modes of interaction.

A related phenomenon, that of co-operation and competition has received some attention. Vercoe (1971) used the *Prisoners Dilemma Game* on a sample of 123 children and found that the Maori eight year old is neither more nor less co-operatively oriented than European eight year olds, nor do they perform better than the European child in a co-operative social situation as opposed to a competitive social situation (p.67). Using *Madsen Co-operation Boards,* Thomas (1975) found little difference between urban Maori and Pakeha children, but a considerable difference between those two groups and groups of rural Maori and Cook Island children, who were much more co-operatively oriented. Unfortunately a group of rural Pakeha children were not included in the study which would have allowed a clearer distinction to be made between effects due to rural or urban residence.

More directly related to achievement are studies by Podmore (1978) and by Nicholls and Barnett (1977). Podmore's observational study found ethnic differences on specific academic survival skills (attending behaviour, complying behaviour, interaction with peers and classroom location). Nicholls and Barnett (Study 3) explored the 'fear of success' hypothesis, and although somewhat uncertain of the validity of their measurement procedure, conclude that there was no indication of any greater fear of the consequences of success amongst the Maori pupils in their sample than amongst the Pakeha pupils.

A most comprehensive study of the self concept of Maoris is reported in Ranby (1979). Using a very large stratified sample of North Island secondary school pupils, he found that on average the Maori self concept was 'lower' than for non-Maoris after controlling for family size, SES, age, class and academic level. Also he found no evidence of any relationship between the presence and strength of Maoritanga courses in the school and the 'strength' of the Maori self concept. In his discussion, Ranby makes some very interesting points about the cross cultural use of tests (and the concepts they seek to measure) such as a self concept test. He asks; 'Is a positive Maori self concept the same as a positive Pakeha self concept?' Fitzgerald (1977) explores the related area of Identity.

There have been three studies of friendship patterns amongst Maori and Pakeha children. Edgerley (1972) tested 233 pupils at Standard 4, Form II and Form III levels and found that Maori and Pakeha had similar numbers of close friends and acquaintances. Unlike Pakeha girls, Maori girls showed a preference for one close friend at the Form III level. Generally, Maori children showed a tendency to opt for a friend of 'own race' as they moved up the three age levels. Also parents had a stronger influence on choice of friends for the Maori group. A good study by Morrison (1978) confirmed some of Edgerley's findings with a sample of 605 aged 6 to 11 at four schools with differing Polynesian enrolment ratios, (the enrolment ratios were used to generate the expected frequencies for the Chi-squared tests). His data strongly supported the following two hypotheses:

1. The number of own race popularity choices will be significantly higher than would be expected from the distribution of racial membership of the school; and
2. the number of own race popularity choices will increase significantly with age.

A third hypothesis was strongly rejected:

3. As the size of the minority group increases, so will the ratio of observed to expected cross-racial friendship choices.

In fact a significant trend in the opposite direction was found, i.e., an increase in the ethnic polarization of friendship choices as the proportion of Polynesians on the roll increases.

Edgerley's first finding has received strong support from Young's Rotorua study (Young, 1978) which used 938 Form I pupils. His basic hypothesis was that Maori children would have larger and less persistent friendship groups than would Pakeha children. The expected pattern showed up on first analysis, but when the data were re-analyzed using multiple regression, semi-partialling out the effects of some environmental variables (the key ones being family size and whether or not a child had relatives in the near vicinity) the Maori-Pakeha differences disappeared.

Another aspect which bears on pupils attitudes and to have received some research attention is that of future time perspective. Bray's reported findings (1970, 1971) of Maori-Pakeha differences in both future time perspective and delay of gratification need to be treated cautiously as there is no control in the sampling of such factors as family size or socio-economic status. Havighurst (1973) did control for socio-economic status (though he ended up with a quite unbalanced sample), and tapped rural and urban fifth formers and young people in the work force. He found that Pakehas (and high SES Maoris) had a clearer image of the future, and that in general Pakehas had a longer time perspective than Maoris, but that there was no difference between middle class Maoris and middle class Pakehas. Havighurst interprets this as evidence of increasing acculturation to European patterns by urban, middle class Maoris.

In summary the research reviewed in this section shows that while teachers may more often than not be quite ignorant of many aspects of Maori culture, there is little evidence of discrimination in classroom practices. However, the facts that Maori culture is clearly of little interest to teachers, and the Maori value system of such little significance in the organization of the school, point to a much more fundamental form of discrimination that is revealed in any of the research reports. Bordieu claims that one of the major functions of an education system is the reproduction of the cultural and social systems of the dominant group, and the evidence of teacher attitudes reported here would seem to be consistent with such an assertion. Further support for Bordieu's view is to be found in those studies of pupils which show that the results on various factors for Maori middle-class and urban children are more like the results of Pakeha children than those of other Maoris, Thomas (1975), Havighurst (1973). I think Havighurst is correct in indicating that 'getting on' for Maoris means becoming increasingly like middle class Pakehas, and I also think it to be one of the fundamental outcomes of our present schooling system to make it impossible to 'succeed' in any other way, a point which will be taken up in the final section. It seems to me that an awareness of this state of affairs is reflected in:

1. The small size of the Maori 'middle class'; and
2. the data on friendship which show an increasing polarization of friendship choices along ethnic lines with age and in increasingly mixed schools. (Edgerley 1972, Morrison 1978)

3(ii) Intellectual Development and Assessment

The research literature in this rather technical field has been well reviewed by St. George and St. George (1975) and brought further up to date in R. St. George (1977). Following a detailed analysis of studies which utilize cognitive or performance tests St. George concluded that: first, it is an unwarranted assumption that Pakehas would outperform Maoris on measures of intellectual ability (verbal or non-verbal); secondly, with young subjects significant Maori-Pakeha differences are much harder to find the more recent the study was carried out. This result is due, he suggests, to the much greater degree of commonality between the environments of Maori and Pakeha children now than in the past; thirdly he found that group measures of ability have been used in the majority of studies reported; fourthly, much of the data reported was equivocal due to sampling restrictions in many of the studies; fifth, and perhaps most important for the purposes of this conference, St. George reports that far too few studies using tests of cognitive and performance ability bother to carry out (let alone report) reliability and validity checks within the ethnic groups they are studying. I do not propose to pursue this area further here, as it is a complex area which deserves treatment in a separate paper. Suffice to say that there is a clear need for comparative surveys with adequate samples, using instruments whose reliability and validity characteristics are known for the groups on which they are to be used. St. George's own study (1977) of the *Queensland Test* is a good example.

A brief mention is warranted here by the studies that have explored the possibility of stylistic differences between Maori and Pakeha in the cognitive area. Chapman (1973) found no difference between adolescent males on Witkin's field-dependent-independent dimension. Chapman's findings in this perceptual area, are echoed in Harker (n.d.) who found no difference in preferred mode of categorization between Maori and Pakeha Standard Three pupils.

3(iii) Social Factors

A number of the studies covered in previous sections overlap into this category. In addition however, there are a number of other studies which take up wider issues, and have their affect on education. R. St. George (1972) reviewed studies of racial intolerance in New Zealand and found that they consistently reported evidence of racial prejudice on the part of Pakehas, directed toward Maoris. It is arguable that this situation may have worsened with community conflicts over specific land issues in recent years, the growing levels of unemployment, 'gangs', and the growing confidence of Maori cultural self determination, any or all of which may be seen as threatening by Pakehas. However, the last available Report of the Race Relations Conciliator, for the year ending in March 1978 (E.17) reports a decline in the number of complaints from the previous year - though previous years had witnessed steady increases. More directly concerned with education, Spoonley (1979) has produced an analysis of the social structural inequalities and the educational process in New Zealand. Spoonley advocates a policy based on affirmative action as the most realistic way of overcoming the structural inequalities working against Maoris. He suggests that although there is plenty of talk about multi-culturalism:

> ... the wider community and the politicians (emphasize) the unity of New Zealand society and refuse to accept that ethnic pluralism exists, and that it needs to be reflected in the organization of social institutions.
>
> (Ibid, p.85)

He also suggests that the welfare state tradition of government which has put its emphasis on equality of access meritocracy and universalism, has proved inadequate as a just distributor of the social goods and benefits of education. Further, Spoonley is pessimistic about the climate of public opinion in New Zealand which he sees as opposed to affirmative action involving positive discrimination.

Social factors within the Maori community have often been ignored in past research, but a number of recent studies have shown how important such factors can be. McDonald (1973) has shown the importance of classifying the community of residence in studies involving Maoris in terms that are relevant to other aspects of Maori culture, rather than the 'traditional' research classifications based on Euro-American models. Hence it is not the town itself or its size which is important, but the structural relationship of the Maori community to the other communities who make up the town which crucially affects aspects of Maori life and behaviour. Kawharu (1975) presents an interesting study of a Maori community and devotes a major part of the work to education. Although events have rather overtaken the particular community studied, it remains a useful study which provides analysis of the complex interactions between social forces acting *on* a Maori community, and those operating *within* it. Both sets of forces have relevance for the study of educational performance, and there is a clear need for further community studies of this type in all four of the community types suggested by McDonald - kin-based separate, kin-based engulfed (the type studied by Kawharu), migrant with Maoris exceeding 10 per cent of the population, migrant with Maoris under 10 per cent of the population.

Some further social and political factors will be taken up in the concluding section.

3(iv) School Factors

The most comprehensive study of the impact of a school on its Maori pupils is that of Cleave (1976). This excellent anthropological study of St. Stephen's school reports the members (teachers, pupils and parents) 'definitions of the situation' and explores the extent to which these definitions coincide with official structures. The unofficial life (underlife) of the school is also given extensive coverage, and an interesting theoretical discussion constitutes the final part of the work. The author concludes that the success of this particular school is due to the fact that the structural features of the institution are perceived by pupils to be 'Maori' as well as more formal aspects of the curriculum.

Other aspects of school life have received some attention. Kerr (1971) pointed out the deleterious affects of long bus journeys to school, and showed that in the school he studied this particularly affected Maori pupils as they were from the most remote areas. Codd and Stewart (1975) in their study of a boarding hostel at a state girls high school suggest that the hostel environment was a more supportive and congenial one for the Maori pupils than for the Pakeha pupils due to the predominance of communal features.

Interesting reports from principals who have succeeded in developing school environments in which Maori culture is reinforced and treated positively are to be found in Gregory (1974), Blank (1974), Smith (1974) and Johnson (1974). Also Ritchie (1978) provides interesting material developed at Te Kohanga experimental pre-school centre in Hamilton.

The school factor to receive the most attention in recent years has been the curriculum. Benton's work on language and bilingual schooling (discussed above) has clear implications in this area. It is clear that these implications affect the social and political spheres as well (Benton, 1979c).

Ramsay (1972) traces the place of Maori culture and language in the school curriculum and indicates the main social and political influences affecting this place - see also Devlin (1976). Attention is also given to this question in the major historical work on Maori Education, Barrington and Beaglehole (1974). Royal (1975) looks at some of the administrative implications of introducing Maori language and culture into the curriculum, and also some possible cultural outcomes. He argues for:

1. Biculturalism for Maori pupils.
2. Inter-cultural understanding for Pakeha pupils.
3. Maoritanga as a contributor to an emerging New Zealand culture.

In curriculum terms he foresees some conflicts arising among these aims, but resolves them into two thrusts: first, that bilingual and bicultural programmes be available to all who so choose; and secondly the forging of 'Kiwitanga' (sic) from the two cultural inputs. Royal goes on to suggest methods of realizing these as objectives in Secondary Schools. This raises a number of fundamental issues, which need to be examined.

Lawton (1975, p.6) defines the curriculum as 'A selection from the culture of a society'. In this regard the Currie Commission commented that:

> The school... has a double task with the Maori pupil. It is not, nor can it ever be, the prime agency in conserving the Maori cultural heritage; its main task is undoubtedly to provide the Maori pupil with the educational equipment to enable him to play his part in the modern world and to this end the Maori pupil has the same body of learning to master as the non-Maori. But such elements of his Maori background must be included in his schooling as will give him still the sense of belonging to a race of known and respected culture. The Maori pupil will then have a surer basis on which to build the scholastic achievement of which he has such need.
>
> (Currie Commission 1962, pp.415-416)

This quotation probably reflects the opinions of most people concerned about education in New Zealand. There are two matters from this passage which deserve comment: first the implication of the penultimate sentence; and secondly the empirical testing of the ultimate one.

Whatever the intentions of the Currie Commission, the passage above can be interpreted to mean that culture (Maori culture in particular) is something that can be divided up into 'packages' or units of study, labelled 'Maori Language', 'Maori Studies' and so on, then slotted into timetables where they can be utilized within the curriculum like the other subjects. Whether such a programme would give a pupil a 'sense of belonging to a race of known and respected culture' is debateable since such 'packaging' is done on the basis of a set of values and assumptions about the curriculum (and about knowledge in general) which are entirely European in origin. It can be argued that it is not only the content of a curriculum which defines its cultural ethos, but the way it is organized, and the relative status given to various 'subject' areas. It is these structural aspects of educational knowledge that Basil Bernstein takes to be the distinctive feature of the Sociology of Education (Bernstein 1977 : 112). Bernstein's penetrating analysis of curriculum structures and their relationships with power and social control should be compulsory reading for those involved in educating children of mixed ethnic origin and indicates a fruitful area for New Zealand based research. Briefly, using Bernstein's model, New Zealand secondary schools would be seen as operating a 'collection' type of knowledge code in which contents stand in a closed relation to each other, being clearly bounded and insulated. Under collection codes: knowledge is private property with its own power structure and market situation; subject loyalty is developed in students; students learn to work within a received frame (discipline); the evaluative system places emphasis upon attaining *states* of knowledge rather than ways of knowing; the pedagogical relationship tends to be hierarchical and ritualized; the pupil seen as ignorant with little status and few rights; and educational knowledge is kept separate from everyday 'common-sense' knowledge (except for the less able children whom we have given up educating).

An alternative model elaborated by Bernstein is called an integrated code. In such a code previously insulated subjects are subordinated to some relational idea which blurs the boundaries between the subjects. Thus integration reduces the authority of subjects and disciplines and has implications for the other features - noted above as characteristics of collection codes.

The point I wish to make here is that these knowledge codes have clear relationships to cultural and social contexts. The collection code is clearly 'suitable' for a hierarchically organized socio-economic system where division of labour is marked. Thus in a modern industralized society schools featuring an 'integration' type knowledge code are confined to the periphery of the education system as various 'alternatives'. A collection code also clearly facilitates social control through education especially when those who fail to attain appropriate 'states of knowledge' can be convinced through the use of 'scientific' legitimating devices such as I.Q. tests, that their failure is their own fault. While it is true that Maoris (like Pakehas) have to earn their living in a modern, industrialized labour market, which implies at least a 'common core' curriculum for all, the addition of 'elements of... Maori background' involves more than new subjects.

Bernstein suggests that there are three message systems through which we convey information about our knowledge code : curriculum (the one given emphasis by the Currie Commission); pedagogy; and evaluation. If we wish to incorporate into our schools a selection from the Maori knowledge code, then we must be prepared to look seriously at pedagogical and evaluative aspects as well as curriculum content. I see the development of the Whanau house design in secondary schools as a significant step in the direction of a reformed pedagogy (at least it facilitates such reform - whether we end up with old wine in a new bottle remains to be seen). The work of Graves (1974) discussed earlier draws pedagogical conclusions from their studies of Maori and Pakeha learning styles. The abolition of externally moderated, norm referenced examinations as the sole legitimating devices to control 'what counts as educational knowledge' would be a long step in 'freeing up' the evaluation message system also.

The second matter I wanted to raise was the assertion that Maori 'subjects' in the curriculum would lead to an enhanced self-image which in turn would lead to improved performance in 'real' subjects. This question is easily subject to empirical verification. Ronald's 1971 study of Maori language and pupil characteristics has some major methodological flaws which make the findings unreliable: First, no attempt to match the sub-samples, hence no control over other factors which could be varying along with the presence or absence of Maori language instruction; and, second, you cannot assume that the relationships he did find (namely, that those learning Maori: (i) valued education more highly; (ii) considered themselves peer leaders; (iii) had greater pride in their Maori descent; (iv) take more part in Maori activities; (v) had a greater sense of school achievement; and (vi) had higher teacher ratings) are causal in the direction he indicates. Indeed, a good argument could be put forward in favour of a reversed direction. Sample control is crucial if any causality is under study. Ranby's study (1979) with a much more satisfactory sample showed no relationship between self concept and the presence and strength of Maoritanga courses. He did find, however, that the schools with Maori traditions did better than the state schools, and goes on to suggest that Maoritanga is something that is lived, not something that you teach.

Hence the assertion of the Currie Commission is lacking in empirical support. From my own perspective such a question is unimportant as it seems to me to be a complete denial of a multi-cultural education system if the only grounds for accepting 'elements' of Maori culture into the curriculum is that they lead to improved performance in 'real' (i.e., Pakeha) subjects.

Finally, the problem confronting both researchers and administrators for the future is well stated by Codd (1972) who states that the question should not be 'How can we cope with Maori children?' but:

> What can be done to our formal education process in order that it embrace, reflect and sustain the cultural diversity which exists in our society?
>
> (Ibid., p.34)

Methodological Considerations

A number of researchers warn of the dangers of using concepts (and test instruments) in an unthinking way, assuming that such concepts or tests are both relevant and appropriate to the different groups being studied. McDonald (1975), Harker (1976) and Kinlock (1979) warn of the lack of relevance of occupational status to Maori criteria of social status - the two do not appear to be linked and the relationship to behaviour is not nearly as closely linked for Maoris as for Pakehas. Ranby (1979) in his discussion of the self concept raises issues that are generally applicable to psychological concepts, that they cannot be assumed to have the same meaning within different cultural systems, nor to bear the same relationship to behaviour. Hence, as St. George (1977) points out, measuring instruments need to be thoroughly validated for the group being tested if the results are to have any meaning at all.

McDonald (1976) criticises the wide variety of criteria used to define Maoris for research purposes. After a detailed outline of the research problems associated with the terms Maori and Pakeha she suggests that researchers must be much more willing to make use of the categorizations made by the group being studied, as well as accepting 'self report' as the most meaningful measure of identity. In another paper, McDonald (1978) takes up the problem of communication in cross-cultural research generally. From her own research experience and the work of Metge and Kinloch (1978) she concludes that such communication is problematic because:

1. of differing beliefs and values;
2. of the status differences that may exist (and of the interpretations of these differences which may be being made);
3. of different interpretations of behaviour; and
4. of the way each culture prefers to organize events and encounters.

Many examples are given of misunderstandings which have occurred because of a failure to understand the way communication can break down in a cross-cultural situation. Some evidence of the way such cultural differences in the 'definition of the situation' can affect performance is to be found in Nicholls and Barnett (1977, Study 1). They set out to test the hypothesis that Maori children would show greater wariness in testing situations. Their methodology involved giving the Peabody Picture Vocabulary Test to matched samples of low SES Maori and Pakeha children (together with a sample of high SES Pakehas). The test was administered under three conditions: play; standard; and cool; to both five year olds and ten year olds. The main finding was that at both ages Maori children showed a significant drop in performance under the impersonal 'cool' testing situation, which was not found in either Pakeha group. This finding was taken to support their hypothesis, and they go on to argue that the 'cool' condition was 'culturally alien' for the Maori children (p.8). In conclusion they suggest that it is particularly 'important to establish a supportive testing climate with Maori children if they are to display their developed competence'. (Ibid). They also point out that these 'maladaptive motivational tendencies' might not in fact be maladaptive at all 'if schools were willing and able to reflect the positive values of Maori culture' (Ibid). Some caution needs to be exercised here, however, as the Maori children performed at the same level under both the 'play' and 'standard' testing conditions, and also, even the 'play' condition is still a test situation, hence the data generated by the design do not provide a fully rigorous test of the hypothesis.

On looking at the body of research in this area as a whole a number of trends become apparent. First, there is an increase in the use of ethnographic techniques involving observation in schools and classrooms. The classic participant-observation method of anthropology has rarely been utilized, the major exception being the study by Cleave (1976). It is here that the major thrust in the future must come. What actually happens in classrooms, how people actually treat each other, what they actually think about each other are best revealed by observing them in real classrooms and in real schools. Hence there is a need for more studies carried out in naturalistic settings, utilizing the evolving methods of observation. There is certainly still room for well designed studies of the experimental or survey type, but they cannot by themselves provide us with insight and understanding into the way schooling affects the lives of Maori and Pakeha pupils. The comments made in the section on historical research are generally applicable in all areas, that is, too little regard has been taken of Maori viewpoints. Too few researchers try to step outside their own cultural framework (of which social science is a part) and try to view the situation from the point of view of those being researched, or even consulting with members of the 'other' group. McDonald (1977b) shows how such consultation can be turned to the mutual benefit of researcher and researched. Also it should be noted that Maoris do have views about education (most decided ones according to Royal (1977)) which are not sufficiently well known or researched.

Let me conclude this section with a call for more research which is meaningful from the viewpoint of the culture of the researched, rather than an externally applied measurement process using tests and behavioural concepts derived from the culture of the researcher.

Concluding Remarks

Cultural difference implies, amongst other things, different value systems, which include in turn, different definitions of 'worthwhile activities'. If a minority culture places less emphasis on achievement (in the educational institutions of the majority culture) as a worthwhile activity than does some other culture, and furthermore, if in that minority culture educational achievement does not automatically confer high social status or prestige on the achiever, then it is to be expected that children from such a minority culture will not perform so well at schools oriented to an achievement based set of values and status conferring criteria. This, it could be argued, would be the case to some extent in New Zealand with regard to Maori and Pakeha children.

In the face of strong pressures to equalise educational performance for Maori and Pakeha children, there would appear to be but two choices (or some combination of them); through parent education and intensive pre-school intervention attempt to restructure the value system of Maori children in order to bring it into line with the requirements for success in the school environment; or make adjustments to the school environment (such as curriculum reform) in order to provide greater continuity with the Maori value system. Both of these alternatives have inherent problems. The first alternative if successful, would result in the disappearance of Maori culture as a distinctive life style - and the history of education in New Zealand has shown that over a century of effort along such lines has not been particularly fruitful, and has been perhaps counter-productive. The second alternative may go some way to achieving the desired objective, but as Glazer (1969) suggests: 'those groups that do well in one school system will very likely do well in another'. What he is suggesting is that if the criteria for success in school are changed, those groups with high cultural motivation to succeed will adapt and continue to succeed under the new criteria. For Glazer the factors 'causing' ethnic differences in educational achievement lie in the different value systems of the cultures associated with various ethnic groups and the extent to which such value systems motivate children to succeed in a school environment... Hence achievement differences cannot be ameliorated by changes to the educational system - which rules out the second alternative mentioned above.

But the first alternative is not tenable either in a democratic pluralistic society such as New Zealand. As the Advisory Council on Educational Planning states:

> In a society which permits a wide diversity of styles of life and beliefs, and which is vigorously pursuing with its main ethnic sub-group a policy of cultural coexistence, it is obvious that no consensus on detailed national aims of education is possible. In fact, such consensus would indicate a degree of cultural conformity which is the very opposite of the present aim of cultural diversification.
>
> (1972, pp.1-3)

Is there a solution to this dilemma? The beginnings of a solution are perhaps to be found in a questioning of the wisdom of insisting on equalising performance for all ethnic groups. If New Zealanders are genuine about their society as a multi-cultural one, in which all cultures are accorded equal status, then perhaps we have to learn to live with some measure of achievement differences between ethnic groups. If success in school is in some way related to achievement motivation which in turn has its roots in cultural value systems and life styles, and it is these value systems and life styles we wish to retain as viable alternatives in our society, then it would seem inevitable that we should expect there to be achievement differences between ethnic groups. Glazer makes some important points when he reflects that:

> The question that troubles me most is what attitude we are to take to these differences. Are we to view them as the consequences of ill-will - that of teacher, administrator, the society in general? How elaborate are we to make the efforts to wipe them out, and how successful can we hope to be no matter how elaborate our efforts are? Are our measures to equalize to include the restriction of the opportunities of those groups that seem to find school achievement easy? Or are we to develop a set of values that accepts within some measure differences as desirable and expectable and tries to mitigate the negative consequences that society imposes for them? These are hard questions, and they are questions to which we do not have answers. ... We need to press not only our research on these differences, their origins, their extent, their causes, the measures that reduce them, but also develop and strengthen a political and social philosophy that permits a society to accept them, to live with them, and be stronger because of them.
>
> (Op.Cit. p.195)

Glazer's sentiments find an echo in the report of The Committee on Secondary Education, (*Towards Partnership,* 1976) who state that their recommendations:

> ... are an attempt to compensate for differences that put any groups at a disadvantage, to remove discrimination, and to provide for the development of society beyond mere acceptance of cultural complexity... What we had to work towards was the step beyond recognition of difference, beyond respect for diversity, even beyond tolerance... It is our hope that the new generations of New Zealanders, as well as coming to understand the major cultures, will appreciate also our many cultures. They will accordingly respect them and, because they value the diversity that results, will identify with each and every culture and hold their opportunity to do as something precious.
>
> (Ibid., pp.20-21)

The point that then becomes problematic is trying to determine the area where achievement differences constitute real disadvantages for individuals in our society, over and above the differences that will inevitably arise between children from diverse backgrounds in a uniform national education system.

The conclusion just reached seems eminently plausible and provides a nice sense of closure. However, Glazer's views can be seen as something of a 'cop-out' since the school is seen as entirely unproblematic. Earlier I quoted Lawton who defined curriculum as a selection from the culture of a society. In a multi-cultural situation the curriculum can be defined as a selection from the culture of the *dominant group* in that society. Also, the pedagogy and evaluation techniques used (Bernstein, 1977) derive from the culture of the dominant group. Hence to say that we must learn to live with performance differences between Maori and Pakeha (indeed Glazer suggests that we must expect them), assumes that we have exhausted the educational options open to us. Nothing could be further from the truth. As suggested in the section on the curriculum, we know virtually nothing of the Maori knowledge code, nor what kind of knowledge Maoris regard as most worthwhile. Where Maori elements have been added to the curriculum they have been divorced from their cultural context and incorporated in terms of the pedagogy and evaluation systems of the dominant group. A genuine multi-cultural education system would not only have various knowledge codes in operation and the different subjects that these imply, but there would be a variety of ways of transmitting these knowledge codes using culturally appropriate pedagogical methods, and with a variety of options available to evaluate when successful transmission has taken place (see also Gadd (1976)). Most, or all of these options would be available with English and Maori as the medium of instruction. As Benton has pointed out (see above under Language studies) such a proposal is quite outside the realms of educational decision making as it has implications for the whole of New Zealand's social fabric. The political contentiousness of such an issue goes without saying, and may account for the fact that this is the area of research and policy on Maori education that has received the least attention.

To return to the quotation from the Currie Report (see above, p.58). Why can't the education system be a prime agency in conserving the Maori cultural heritage? It performs this function for New Zealanders of European origin, and if our education system is to be multi-cultural it must do the same for New Zealanders of Polynesian origin.

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Research on Special Education in New Zealand

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Special education is usually defined as provisions made for children on the basis of particular and atypical physical or behavioural characteristics they have or manifest. Most current and widely used special education textbooks adopt such a definition, and Havill and Mitchell's (1972) book - so far the only general New Zealand reference book in this area, is no exception:

> Special education refers to the facilities, materials, and teaching resources provided for children who because of exceptional physical, intellectual, emotional, or social characteristics, can not receive maximum benefit from a regular school programme.

There is nothing wrong with defining special education in this way. Indeed the fact that a number of children have or show exceptional physical or behavioural characteristics (or can be reliably predicted to do so) is the very foundation upon which special educational provisions are planned and made. What needs equal recognition, however - and is frequently overlooked, is that such provisions will be necessary to the degree that regular classroom provisions are inadequate to accommodate children with special needs. It is possible - indeed probable, that many children are

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receiving special educational provisions mostly because of the inadequacies of their particular school/classroom situation and not *primarily* because of any special teaching needs they may have. In this sense, special educational services can be viewed as a type of 'Band-Aid' facility - available when regular class provisions are inadequate for particular children because of inadequacies on the part of the teacher (i.e., in teaching ability, understanding of the special needs and learning/behavioural characteristics of the children concerned, etc.) or inadequacies in resources available to the teacher (i.e., equipment, time, etc.). The fact that it is very difficult to ascertain in any particular case whether a child is receiving special education primarily because of characteristics he/she has or primarily because of characteristics or resources his/her teacher does not have, makes it very difficult to specify the special educational needs of such children, or to design or evaluate special educational provisions vis-à-vis the needs of the children concerned.

The historical background to, and development of New Zealand special educational provisions and relevant special educational research up until approximately 1970 have been described and discussed in Havill and Mitchell (1972). The present paper is concerned with research on New Zealand special education in the years since 1970. At that date the New Zealand Department of Education offered a sizable array of special educational services and provisions, with 11,614 pupils (2.17 percent of the total state school population) receiving special educational help (excluding those in receipt of visiting teacher or guidance services). In December 1978 the total number and percentage of pupils in state primary and secondary schools receiving special educational help (apart from guidance or visiting teacher services) had increased to 15,831 and approximately 2.24 percent respectively, but apart from a change of terminology for blind and partially-sighted children (now called visually handicapped children) and the establishment of facilities for a number of small groups of preschool educationally handicapped children and 'children with special needs' the nature and overall distribution of services in 1978 seems closely comparable with that of 1970. McAlpine and McGrath's (1972) suggestion with respect to provisions for gifted children in New Zealand, i.e., that 'nonprovisions'might well be a more appropriate term still seems conspicuously apt. Similarly, Clay's (1972) observation that 'the concept of learning disorders has not yet made a significant impact on New Zealand education', seems appropriate with respect to extant special educational provisions for children with major specific learning difficulties - a group who comprise approximately 7 percent of the school population according to most overseas estimates and a recent New Zealand survey by Walsh (1979).

As in most other Western countries, special educational provisions are available in New Zealand public schools for children who show social or emotional maladjustment, mentally retarded children, and children with speech, hearing, visual or physical handicaps or severe reading difficulties. Special educational facilities tend to be concentrated in major cities, although through various combinations of hostel accommodation and transport arrangements, etc., most New Zealand children who require special education are probably able to be accommodated in public schools. Moreover correspondence school and visiting teacher services are available for children living in remote areas who can not be transported or accommodated in a hostel, or for children unable for any reason to attend a public school.

It is much easier to discuss the range and types of special educational provisions available (this information is ably catalogued each year by the New Zealand Department of Education) than it is to specify what is 'special' about such provisions. As long as the *raison d'etre* for special educational services is perceived by the educational community as exclusively the consequence of the specialness (= difference) of children the need to make such specifications may not be readily apparent. From this perspective children who 'do not fit' the 30-40 pupils per teacher regular education system would be likely to be viewed as being in need of accommodation elsewhere, with lower teacher-pupil ratios and modifications of the curriculum and teaching methods to accommodate their particular learning and behavioural difficulties. Indeed something like this view has probably underpinned the development of special educational services in most countries including New Zealand, and more importantly for present purposes such a view has almost certainly influenced (and perhaps attenuated) the development of special educational research. On paper, lists of 'special' educational facilities and provisions appear to constitute a 'special' educational system and while in New Zealand as elsewhere it has probably been prudent for educational administrators and politicians to adopt the Queen of Hearts dictum, viz., 'if we choose to call services special, they are special', and not to dwell on what might be perceived in some quarters to be academic issues, such as delimiting the 'special' characteristics of special educational provisions, the question of the effectiveness of such provisions must ultimately be addressed.

While evaluations of traditional special educational provisions in overseas countries have shown noticeably mixed results, a positive relationship is apparent between the quality of programme input and the extent of progress of the children concerned (Kirk & Gallagher, 1979). At the same time it is unfortunately the case that very often the quality of the programme input has not been high (Milofsky, 1975) - a point documented in many evaluation studies of special educational provisions and a point grasped by many parents (typically through N = 1 case study data) The result has been a dissatisfaction with traditional special educational provisions on the part of parents and special educators and pressure (at times exerted via legal and fiscal means) to abandon many of the traditional strategies in favour of mainstream special educational provisions. When the Band-Aid function of special educational services is acknowledged, however, it is patently clear that mainstream special educational facilities can not be considered in isolation from the quality of extant regular class provisions and can not be expected to be any better than traditional facilities unless such mainstream facilities are in fact (as well as name) special. If the specialness of mainstream special educational facilities is to be assured, requisite competencies, strategies and resources of regular class teachers will need to be identified and developed. Given the probability that many regular class teachers and classroom situations are already conspicuously wanting in some or all of these respects, the development of effective mainstream special educational facilities seems likely to be a decidedly long-term venture.

It is difficult to separate research on the education of children from research into other aspects of their growth and development, or to arrive at a sensible basis for distinguishing between research which is primarily of educational interest and other research which although relevant to education is primarily of medical, social work, psychological, or sociological interest. This difficulty is greatly exacerbated in special educational research, since medical and/or family/social work problems are practically a sine qua non of special educational needs. It seems appropriate in view of the nature and objectives of NZARE to focus on research (i.e., empirical research) of direct relevance to New Zealand special education. In the present review, attention will thus be confined to those studies which are concerned specifically with the behavioural characteristics of children with special educational needs (and/or of their parents or their teachers) as these relate to current or planned special educational provisions; or with the classroom or playground behaviour of preschool or school-aged children with special educational needs (or of their teachers); or with the effects of special educational strategies. Such a focus in the present review will preclude consideration of psychological studies which deal with various aspects of learning and behavioural characteristics in handicapped groups (effects of operant procedures with mentally retarded children, studies of verbal functioning in the mentally retarded, visual-form perception in cerebral palsied children, etc.) or studies of children in hospitals or other institutions. A large number of theses have been concerned with such questions in the past decade (Pickens, 1975, 1976a, 1976b, 1979). It is not that these studies are considered irrelevant to special education - clearly they are relevant. Rather, the intention is to focus on research *directly* and specifically concerned with special educational conduct and effectiveness. Studies will be grouped in three areas: preschool, school years, and postschool.

Preschool Studies

The lack of research on atypical preschool children was noted and deplored by Barney (1972) and while several studies have been conducted in the past decade, the current sum of knowledge in this area is noticeably slim. The relative lack of research attention to the preschool years may be related to the fact that preschool education is neither compulsory nor a direct state responsibility in New Zealand, and currently reaches only about half of the nation's preschoolers (Barney, 1975). Indeed, it seems likely that current educational and social policy and the research situation both reflect the predominance of a view of early childhood as 'something less than crucial' on the part of the educational and wider community.

The current provisions for handicapped children have been discussed by Barney (1977, 1978) and clearly a wide range of provisions is available with noticeable variation in the objectives of programmes offered, and in the training of teachers/helpers etc., and conspicuously little information on the conduct or effectiveness of extant provisions. Panckhurst (1977) undertook a national survey of the special educational needs of kindergarten pupils. It was found on the basis of teachers' ratings that approximately 11 percent of the kindergarten population had special educational needs. Considerable variation was evident in the incidence of particular handicapping conditions with speech/language difficulties, behavioural maladjustment and severe developmental lag being the most frequently noted problems. Noticeably more boys than girls were reported to have special needs (the rate was almost 2:1) - a characteristic finding in surveys of special educational needs at all age levels.

A survey by Hallinan (1978) of a group of 94 Christchurch families with handicapped children (including intellectually handicapped, physically handicapped, multiply handicapped, deaf, asthmatic and autistic children) indicated that approximately 75 percent of the parents whose children had attended regular preschools were reasonably happy with the services their children had received. A similar result was obtained from parents of children who had attended a special preschool. The author noted Barney's (1974) estimate that probably less than 1 percent of handicapped 3 to 4 year-olds attend regular preschools, and observed that the generalizability of the results would almost certainly be very limited - a caveat which must also be applied to Panckhurst's (1977) data. It is also not clear from the Christchurch study what parents were 'satisfied' with, nor what can be deduced from the obtained results - possibly that New Zealand parents are grateful for small mercies It would certainly be most unwise to interpret the results as a vindication of extant provisions. There is a need to determine what the special educational needs of preschool handicapped children are, to examine what is happening in current preschool educational facilities, and to assess the situation in these terms.

Clearly the special educational needs of preschool handicapped children will vary greatly depending on the type and extent of their disabilities and the adequacy of their home and family situations, etc., and such variability will need to be heeded in planning and evaluating provisions. An example of the type of research needed in this area is that of Pearl (1973) who examined the intellectual and physical characteristics of preschool age spina bifida children, and the attitudes of their mothers. In general the children were of low average intellectual ability, paralyzed to some degree, and liable to be incontinent, and the attitudes of the mothers towards their children were noticeably more strongly influenced by their religious beliefs than by the severity of their child's handicap. The results underline the variability in the children's abilities and difficulties and home backgrounds, which must be accommodated in planning preschool services for this group.

A similar survey was undertaken by Wilson (1975) of the mothers of 5 to 10 year-old cerebral-palsied pupils of special day-schools. The mothers were evenly distributed across the SES spectrum and in comparison with mothers in the general population, were slightly older and showed a higher incidence of still-births. The majority of the mothers had very favourable attitudes towards disabled persons and the attitudes of the mothers did not seem to be related to their religious beliefs or to the age of their children. In view of the probability that family difficulties with physically handicapped children would be somewhat different although as great (if not greater) during the preschool years, a replication of this study with preschool cerebral-palsied children would seem a useful endeavour.

An additional factor which will need to be considered carefully in formulating social policy/provisions is the possibility of additional financial stress in families with preschool (and/or older) handicapped children. A study by Brewer (1973) showed that families with a handicapped child (especially those with an intellectually handicapped or physically handicapped child) were shouldering a greater financial burden than families without a handicapped child. The greater burden derived from additional costs associated with transportation (to school, hospital, etc.), medical fees, appliances, and additional food and clothing. The financial difficulties of families of intellectually handicapped children (and adults) was also documented in a major epidemiological survey by Morrison, Beasley and Williamson (1976). A significant relationship was found between the incidence of additional expenses and the severity of retardation of the intellectually handicapped person. Additional financial support for families of intellectually handicapped children (and adults) thus seems strongly indicated.

A study of social participation in current preschool facilities for intellectually handicapped children was made by Wilton and Densem (1977). It was found that the levels of social participation of intellectually handicapped children in regular preschools were conspicuously greater than those of intellectually handicapped children in special (segregated) preschools but were closely comparable with those of their nonhandicapped classmates. The results suggested that segregated preschool attendance may exacerbate the social learning difficulties of intellectually handicapped children. It needs to be noted as it was by Barney (1977) that the location of handicapped children in mainstream preschool educational provisions is unlikely to be beneficial to handicapped children unless regular preschool teachers feel and are competent to accommodate such children and unless additional resources necessary to accommodate such children are provided. At the same time, the potency of 'setting effects' on the behaviour of children (and teachers) needs to be understood - and indeed utilized. The social development of handicapped children is important as is their acceptance by nonhandicapped children (and their parents and teachers). If these characteristics are easier to foster in mainstream special educational facilities, as seems likely, the development (including evaluation) of such facilities needs to be given higher priority than is apparently the case at present.

Apart from the arguments and policy changes arising from mainstreaming issues, the whole area of preschool education for handicapped children is in the throes of a virtual revolution following the development of a number of effective early intervention programmes. The term 'early intervention' covers a diverse range of home and/or community-based early childhood programmes. Early intervention programmes for handicapped and high-risk children necessarily involve a pedagogical aspect, where an attempt is made through didactic teaching or sequences of planned learning experiences to facilitate the child's cognitive and/or social development. Frequently, such programmes also involve the provision of direct family support services (nutrition supplements, medical care, social worker support, etc.) and in some cases parental education/training in home-making, child rearing, job rehabilitation skills, etc. To date, such programmes have been developed mostly for intellectually handicapped and mildly retarded children (Tjossem, 1976) and most programmes have been developed in the United States (Wilton, 1979b) although several carefully researched Australian programmes have also emerged (e.g., Thorley & Woods, 1979, Clunies-Ross, 1979). A number of the programmes developed thus far have been shown to be highly effective in promoting the intellectual and social development of the children, the most impressive results to date being achieved with cultural-familial mentally retarded children (Garber & Heber, 1977) and Down's syndrome children (Hayden & Haring, 1977).

It is clear that the gains from early intervention programmes will be a function of programme quality and appropriateness, as several writers have noted (e.g., Bronfenbrenner, 1974; Caldwell, Bradley & Elardo, 1975) and that neither of these characteristics can be assured without thorough background research into the particular developmental and/or family difficulties of the children concerned - and into the effectiveness of particular teaching strategies and learning activities. Several early intervention programmes for intellectually handicapped children have been established in New Zealand viz., The Dawnstart Project (Straton, 1977), Project PATH (Mitchell, 1979) and The Mangere Early Intervention Programme (Pook & Singh, 1978). An evaluation of the effects of the Mangere programme (Howden-Chapman, 1979) indicated that two of the five children included in the programme at that time had made very substantial intellectual and social gains, and in three cases the mothers of the children showed significant and positive changes in their interactions with their intellectually handicapped child. It is to be hoped that the thorough development of effective early intervention provisions for intellectually handicapped children and other handicapped children will continue and that early intervention does not degenerate into yet another 'educational fad' which it surely will if programmes are not carefully implemented, thoroughly evaluated, and where necessary, modified accordingly (Marsh, 1977; Wilton, 1979b).

A series of studies in Christchurch has been concerned with cultural-familial mentally retarded children. These children who come almost exclusively from low SES homes, constitute approximately 75 percent of all mentally retarded children and it seems clear that cultural-familial mental retardation can be offset (at least to a degree) if an appropriate early intervention programme is instituted at an early age and continued beyond the preschool years, and that the effectiveness of such programmes is enhanced if the programme is also focused on the home and family background of the child. Such a focus is necessarily blurred at present since relatively little is known (specifically) about the home and family backgrounds of cultural-familial mentally retarded children (Wilton, 1979a). The objective of the Christchurch studies has been to aggregate baseline data on the home and family backgrounds of cultural-familial mentally retarded children as a basis for the development of an early intervention programme. A study by Wilton and Barbour (1978) indicated that children at high-risk for cultural-familial mental retardation (siblings of special class pupils), in comparison with other low SES children, interacted less often with their mothers and spent less time in activities most likely to yield cognitive development. The mothers of the high-risk children engaged less often in didactic teaching, showed less encouragement of their child's activities, and their attempts to control their child's activities more often resulted in failure. In general the high-risk children appeared to experience much poorer opportunities for behavioural competence development than other children of low SES. A second study (Wilton & Irvine) was concerned with the diets of cultural-familial retarded children. The retarded children showed lower intakes of almost all basic nutritional substances than other children of low or average SES, and the retarded group's intake of iron, calcium, and ascorbic acid were below National Academy of Science/National Research Council (1973) recommended daily allowance levels. Two related studies are currently in progress. The first of these is a comprehensive survey of the family circumstances of cultural-familial mentally retarded children (McDonald & Wilton) and this should yield useful data on extant home and family conditions, and on the availability, suitability, and adequacy of current community services. The second study (Densem & Wilton) is concerned with the problem of identifying children at high-risk for cultural-familial retardation - early in life. For a variety of reasons such children are rarely identified before they reach school, and since early intervention programmes are neither necessary nor desirable (and almost certainly not feasible) for all low SES children who are at high-risk vis-a-vis cultural-familial retardation. The intention is to find a group of residential and community measures which will facilitate the identification of this group. Subsequently such measures could be used in conjunction with information from home observations (e.g., Caldwell, 1978) to determine target populations.

The School Years

Prior to 1970, conspicuously little research on New Zealand special educational provisions for handicapped or gifted children of school age had been undertaken (Havill & Mitchell, 1972). This state of affairs has changed somewhat over the past decade, although it is still apparent that educational and social policy/provisions are not formulated from, nor greatly influenced by, research findings. Several studies have been concerned with the characteristics of special educational classroom conditions. Shuker (1974) described the establishment, nature and operation of a secondary school adjustment class for children with behaviour disorders. Most of the pupils subsequently returned to regular classes, and questionnaire data from teachers and former pupils of the class, and from teachers of regular classes in the same school, indicated that the class programme had been effective.

Bray and Wilton (1975) surveyed the classroom behaviour of intellectually handicapped special school pupils and their teachers. It was found that the pupils spent a high proportion of classroom time in behaviour deemed appropriate by their teachers, but that the teachers' interaction with the children was relatively infrequent. The results raised the possibility that most of the observed pupil behaviour in the classroom consisted of well learned responses which required very infrequent reinforcement (and interaction) on the part of the teacher to be maintained at the high levels recorded. Clearly, an examination of pupils' gains in special school classrooms and an analysis of the characteristics of classroom tasks vis-à-vis the extant behavioural development (cognitive, academic, etc.) of the pupils would be a useful next step.

Glass (1977) examined the descriptive characteristics of special class pupils and teachers, and the curriculum materials and advisory services used by special class teachers. Questionnaires were sent to a random sample of 37 primary and 11 intermediate special class teachers (approximately 20 percent of the national total) and the results were compared with *New Zealand Yearbook* data on regular classes. A useful tabulation of information was obtained and in general the results suggest that special classes in New Zealand schools may not be as *special* as they should be. Two additional findings also provide cause for concern. The incidence of Maori children in special classes was found to be approximately four times the level in the general population, and less than 7 percent of the children in the classes surveyed had been returned to full-time regular class attendance. Both of these matters (and others raised in the study) certainly warrant more detailed examination.

Cosson (1978) undertook a series of three studies of the language development of primary special class pupils. A survey was made of the gains over six months in receptive and expressive language on the part of special class pupils, and high- and low-gain classes were identified on this basis. Observations were then made of the classroom behaviour of pupils and teachers and the amount of time the children spent in language-related classroom activities, and the extent and manner in which the teachers monitored the children's activities were determined. Marked differences were evident between special classes with respect to the language gains made by the pupils (Study 1), and differences in pupil and teacher behaviour clearly differentiated high- and low-gain classes. The children in classes which showed high gains in receptive language (Study 2) spent more time than their low-gain counterparts in reading and directed writing activities, and the high-gain teachers devoted less classroom time to administrative activities than did low-gain teachers.

With respect to expressive language (Study 3), children in high-gain classes spent more time in informal language activities than low-gain children, and less time in teacher-directed language activities and in attending to others, while the high-gain teachers spent less time in neutral class and group instruction than did low-gain teachers. In view of the likelihood that most special class pupils would be cultural-familial mentally retarded and would thus probably lack adequate language learning opportunities at home, and given the importance of adequate spoken language as a requirement for successful social and vocational adjustment, more comprehensive examination of the reasons for interclass variability in the language gains of special class pupils seems appropriate. In the case of low-gain classes at least, the need for more vigorous attention to the development and implementation of *effective* special class language programmes seems to be indicated.

A study of work-experience programmes was undertaken by Wilton, Vincent & Keeling (1979). It was found that the classes differed significantly with respect to the amounts of classroom time allocated to particular areas of the curriculum, but that all classes spent most classroom time working at basic academic skills or with specialist teachers, and all spent a conspicuously low proportion of time in either work-experience related activities, or in social/community studies - activities which would be expected to feature prominently in work-experience programmes.

Two studies of the education of hearing impaired children have been made by VandenBerg. The first (VandenBerg, 1971a) was concerned with the written language of children in New Zealand schools for the deaf. A noticeably depressed level of language achievement, distorted patterns of language, and problems in the development of abstract thought were evident in the children (results which were closely comparable with U.S. norms) and the findings raise a number of questions regarding the appropriateness of current teaching strategies and provisions for deaf children. The second study (VandenBerg, 1971b, 1972) was focused on hearing-impaired children who were attending regular classes. It was found that the hearing-impaired children were not making good academic progress, and a noticeably high proportion of the children were found to be leading lonely and socially restrictive lives, devoid of close friendships. The results indicated that the children required more attention and help than they had previously received.

Parents' and teachers' evaluations of special educational provisions for handicapped children provide a further useful perspective on current conditions. A study of Page (1974) indicated that parents of special class children, those of regular class children, special class teachers and teachers of regular classes in primary and intermediate schools were supportive of special classes for mildly retarded children. Most of the parents of special class children felt their children had benefited from special class attendance, and most thought (wrongly!) that special class teachers had received specialized training. In general, special and regular class teachers believed that mildly retarded children received more individual help in special classes, and the need for special training of special class teachers was strongly advocated. While there was no support from teachers for abandoning special classes in favour of special (segregated) schools or completely 'mainstream' provisions, many of the teachers interviewed supported the part-time integration of special class pupils. Parental support for special classes was also obtained by Lai (1977). In this study the majority of mothers of special class pupils were supportive of special class provisions for their children and most believed the special class programme in their school had been beneficial. It would be interesting to examine the bases of decisions made by the parents and teachers in these two studies. It is indeed possible that parental and teacher support derived from an awareness of shortcomings of current regular class provisions and doubt with respect to the possibility of substantial change in the short-term.

Lane and Mitchell (1979) surveyed a group of 67 families, each of whom had one or more 'children with special needs' under 7 years of age. Approximately half of the parents surveyed regarded their contact with school psychologists as being 'of little or no help' as far as the welfare of their 'special' child/children was concerned. This result contrasted with the parents' ratings of the assistance they had received from other non-medical professional services (Crippled Children's Society field officers, visiting therapists, Society for Intellectually Handicapped and Hospital Board social workers, and speech therapists. These results seem slightly more encouraging than those of the Morrison et al. (1976) study, where it was found that approximately 1/3 of families of (pre-school and older) intellectually handicapped children/adults made no use of advisory or practical services offered by voluntary agencies or government departments. A study is currently being undertaken by Gordon, Nuthall & Wilton of speech therapy provisions for intellectually handicapped children. Assessments are being made of the pupils' speech and language development, and parents' and teachers' ratings of the children's communication skills and difficulties and of the need for specialist services are being obtained. Clearly parents' views on the effectiveness or otherwise of current educational provisions for handicapped children must be sought, and their involvement in the education of their children acknowledged, encouraged, and incorporated into administrative and teaching strategies.

Another aspect of parent-teacher liaison is the possible involvement of parent volunteers as teacher-aides in regular and special classrooms. This issue seems directly relevant to special educational mainstreaming concerns. There are certainly limits to the logistic capabilities of even the best classroom teachers, and it may be downright unrealistic to expect one adult to maintain the degree of contact with, and awareness of the progress of individual children in a regular classroom with 30 or even 20 children, which would seem essential for teaching and learning effectiveness. Certainly, such difficulties are made manifest when assurances of this nature are made mandatory as they are in mainstreaming provisions via Public Law 94-142 in the United States. There is also the possibility which seems especially pertinent with young children, that the presence of a single adult in a classroom - directly accountable only to the children, may not be in the best interests of either the children or the teacher. Moreover, the involvement of parents in the education of their children (at school that is) has been a feature of New Zealand education (at least in theory) virtually since the establishment of state educational provisions in this country. While a number of New Zealand schools already have considerable involvement of parent volunteers in the affairs of the school, it seems probable that currently the assistance of parents in classroom activities is not widely sought. Such involvement is not without problems and is certainly not another example of 'the answer'. The issue raises the question of the role of the professional in societal services - a question which is already to the fore in medical, social work, and community mental health, etc., areas. It is being increasingly realized that professional skills are in limited supply and should be concentrated where they are needed most, and that the use of paraprofessional services and lay help, where it is appropriate and sufficient (or can be made so), should be maximized. Such a realization is not a carte blanche for a reduction in the size or quality of professional services (it is the writer's view that we certainly need more and better services!), but rather reflects an awareness of the necessity for fuller and better utilization of those professional services which are available. Fuller use of extant services will almost certainly highlight current training and service inadequacies, and these will clearly need to be rectified. As long as a teacher is seldom if ever in the position (because of logistic problems) to work on an individual basis in his/her classroom with a child having learning or 'special' difficulties, the necessity for him/her to acquire the professional competencies to work with individual children will not be apparent - and as an apparent luxury will thus probably not be promoted or acquired.

An examination of the possibility of maternal involvement in the education of mildly retarded children was also undertaken in the Lai (1977) study. Approximately 50 percent of the mothers interviewed said they would like to help in the education of their children and a similar proportion of special class teachers welcomed such help. It is interesting to note that the mothers' reactions seemed to be independent of the success or otherwise of their own schooling.

A preliminary study of the actual involvement of parents in classroom provisions is being made by Fillary and Wilton. A total of 30 primary school classes - each of which had a group of 1 to 3 children with serious reading difficulties, was identified. The classes were assigned at random to one or two treatment conditions or to a control condition. In 12 of the classes resource teachers visited the classroom on a weekly basis to help the class teachers formulate individual reading programmes for the children. The progress of the children was monitored each week and programme changes were made on the basis of this data. In another 12 classes, parent volunteers were introduced. The parents had been trained in monitoring the children's reading progress and in working as teacher-aides in the classroom reading programme. Weekly observations were made of teacher and child behaviour during the reading programme in the 30 classrooms over a 15 week period and the results are currently being analyzed. A major objective of the study is to determine whether the presence of parents in classrooms results in changes in teacher and child classroom behaviour, and whether following the provision of additional teaching resources, class teachers increase the amount of individual help for the children with serious reading difficulties.

In general, studies of the characteristics of special educational classroom conditions provide few grounds for complacency and raise a number of questions which require examination. Despite the findings listed there is relatively little solid information on what is happening within current special educational classrooms and in the case of provisions for visually handicapped, physically handicapped, speech handicapped, and learning disabled children - no information at all!

A related issue which needs to be examined is the basis of special class admissions, and in particular the possibility that the characteristics of the classroom or the teacher a mildly handicapped child has may determine whether or not he or she receives special educational facilities. Smart, Wilton & Keeling (1979) found some support for this contention in a study of 32 regular class teachers. Half of the teachers had had a 7 to 8 year-old child transferred from their class to a special class, while the remainder had children of comparable age and ability in their classes but had not sought special class placement for these children. The teachers' ratings of the child's (in their class) need for special educational help did not differentiate the two groups of teachers but in comparison with referring teachers, the nonreferring teachers were significantly more in favour of mainstream provisions for slow learning children, they reported a higher percentage of low-achievers in their classes, and a higher proportion of them were married. The results provide some evidence that teacher characteristics, their perceptions of classroom conditions, and their beliefs about mainstreaming differentiate teachers who refer children to special classes and those who do not make such referrals. The extent to which such differences influence special class placement decisions needs to be identified with more precision. Clearly, the special educational needs of special class pupils and those of pupils of comparable ability in regular classes may not be as sharply differentiated in terms of the pupils' behavioural characteristics as is commonly supposed - and in view of the nonprovisions for mildly retarded regular class pupils, acted upon in special educational policy.

The social development of handicapped children, and their social acceptance by nonhandicapped children (an important element of school and community adjustment) has been the focus of a number of studies. Smart and Wilton (1975) studied the social participation of primary special class children during unsupervised playground activities. Such children showed a lower level of social participation than children of equivalent age and ability who were awaiting special class placement, and both of the retarded groups showed lower social participation than nonretarded children of equivalent chronological age or mental age. The results raised the possibility that special class placement may actually inhibit rather than facilitate the social development of mildly retarded children. McLennan (1977) examined the unsupervised playground behaviour of intermediate special class pupils, and obtained similar results to those of Smart and Wilton (1975).

A study by Wilson, Wilton and McGeorge (1975) was concerned with the social development of special class pupils and children of comparable age and ability who were attending regular classes. In comparison with the regular class group, the special class pupils showed significantly higher maladjustment scores on the AAMD - Adaptive Behaviour Scales and significantly lower scores on Piagetian measures of intentionality judgements. The results suggested that the special class pupils' relative lack of ability to take account of others' intentions contributed substantially to their social maladjustment. The possibility that special class admission/attendance was largely responsible for the lower performance and greater maladjustment of the special class group, however, could not be discounted.

An attempt needs to be made to delineate the reasons for lower social participation, greater social maladjustment and less adequate development of intentionality judgements on the part of special class pupils, and the possibility that special class placement in New Zealand may often not be in the best interests of mildly retarded pupils needs to be seriously considered. The fact that special class pupils typically live a considerable distance from the school and thus from other pupils, and the physical differences between special and regular classes (ranges of age and abilities of pupils in the classes, typical class roll numbers, name of class, etc. - and especially the fact that all special class pupils by definition are likely to have adaptive behaviour problems) and beliefs/attitudes on the part of regular class pupils and their teachers seem likely candidates in this respect.

The social development of hearing-impaired children was studied by Witheford, Wilton and Parsons (1974). It was found that children who, for administrative reasons, were returned from deaf-units (special classes) in regular schools to a special school (usually because of a fall in roll numbers below minimum levels necessary for class continuance) showed a degree of regression in their social adjustment (AB scales) and the regression seemed to be more marked in hostel-resident than in home-resident children. The results suggested that hearing-impaired children, who for some reason apart from their ability to cope are withdrawn from unit classes, will be better off in terms of their social development if they are transferred to another unit rather than returned to the special school and that if a return to the special school is administratively unavoidable, the children should be returned to units as soon as possible.

Studies of the effects of special educational provisions on the social development of handicapped children have thus far been confined in their focus to mildly retarded and hearing-impaired children. The results to date indicate that some aspects of current special educational strategies may not be in the best interests of the children concerned. Clearly while a better understanding of the nature and effects of current special educational provisions on the development of mildly-retarded and hearing-impaired children is required, the need for a similar focus on the social development of other handicapped groups seems both indisputable and urgent. At the same time, modifications of current provisions and the effectiveness of alternative special educational strategies also need to be evaluated. Several studies in this category have been undertaken.

A series of studies was completed by Glynn and his colleagues (Glynn and McNaughton, 1975; McNaughton, 1974; Wotherspoon, 1974), in which behaviour analysis techniques were used to develop criterion-referenced measures of the reading and writing behaviour of special class pupils, and specific classes of reading and writing behaviour were systematically reinforced by the teacher. In both studies, dramatic improvement in the reading and writing of the children occurred and follow-up measures (approximately 2 to 3 months later) revealed the stability of the changes. The results seem noticeably superior to those characteristically obtained in special class programmes and indicate the usefulness of such procedures for assessing and facilitating the progress of special class pupils as well as other handicapped and nonhandicapped pupils.

A further study in this group was undertaken by Serjeant (1974) who found that differential social reinforcement techniques were effective in increasing appropriate classroom attending behaviour in special class pupils - those receiving differential social reinforcement and, interestingly, their classmates as well.

Studies which employed behaviour modification principles to reduce disruptive classroom behaviour were undertaken by Ellery, Blampied, and Black (1975) and by McNaughton (1975). The first study showed that both group-contingent and individual-contingent (token) reinforcement conditions effectively suppressed disruptive classroom behaviour in a special school for emotionally disturbed children, and similar results were obtained in the latter study where a single-subject reversal design (individual-contingent token-reinforcement) was used with a primary special class pupil. A similar study was undertaken by Fry and Thomas (1976). A token economy was found to be effective in reducing the inappropriate classroom behaviour of emotionally disturbed children in a special class and during the time children were in regular classes on a part-time basis. The children were subsequently returned to regular classes full-time, and conspicuously low levels of inappropriate behaviour were still apparent approximately two months after their return to regular classes. Clearly behaviour modification/analysis or precision-teaching techniques can make a useful contribution to the development of more effective special educational provisions and further research in this area could and should be undertaken.

Two studies have been concerned with the effects of 'mainstreaming' on the social acceptance and/or social interaction of handicapped children. Allen, Wilton and Ballard (1978) examined the social development of a group of former pupils of a special school for physically disabled children who had been transferred to regular primary and intermediate schools as part of an integration (mainstreaming) programme. The physically handicapped children and their nonhandicapped classmates showed very similar patterns of social interaction during unsupervised playground activities and similar levels of social acceptance (sociometric data and teacher ratings). The data indicate that the physically handicapped children had apparently made a successful adaptation to the physical, academic, and social demands of the regular school. The second study was undertaken by Lilly (1973) who was concerned with the integration of visually-handicapped pupils (most of whom were totally blind) in a state secondary school. Brief questionnaires administered to 17 pupils in a mainstream programme indicated that most pupils believed their integration experiences had been beneficial and the scholastic achievement (School Certificate marks, etc.) of the pupils was noticeably good. It should be noted that a further 8 pupils (those with additional learning difficulties) were not in the mainstream programme, but attended a special class in the same high school - with a limited amount of integration. Data on the effectiveness of the latter programme would also be very useful. It would seem, however, from the limited data available that mainstream programmes for physically or visually handicapped children can be reasonably successful. The variables responsible for such success can not be specified at present, but are of considerable interest and importance, and research focus on these should be intensified and sharpened.

Postschool Studies

Studies of the postschool adjustment of handicapped children are useful for a variety of reasons. Quite apart from their usefulness as a basis for decisions regarding social policy and provisions, such studies provide an 'end-product' yardstick for gauging the suitability and effectiveness of prior special educational and social provisions during the developmental period (Birth to 18 years). Most New Zealand studies to date have been concerned with mentally retarded children and have followed in the tradition of Winterbourn's (1944) landmark investigation.

A study of the graduates of a residential school for mildly and moderately retarded boys was made by Keane (1972). An attempt was made to locate the total group (N = 218) of former graduates of the school and contact was made with the families of 198 of these (6 graduates had died prior to the study). Approximately half of the group were in open employment at the time of the study, less than 25 percent were in institutions (the majority of these being in either psychopaedic or psychiatric hospitals - only one subject was in prison), approximately 3 percent were unemployed, and the remainder were either attending day schools or sheltered workshops. The results for the total group only are presented and it is not possible (from the report) to examine separately data for mildly and moderately retarded groups.

Stewart and Wilton (1977) examined the postschool adjustment of graduates of schools for intellectually handicapped children. The total group of former pupils of the two Christchurch schools who had graduated during the period 1965 to 1976 were surveyed. Approximately one-fifth of the graduates had been institutionalized and the parents' preference for the facilities available in the institutions appeared to be the main factor in their decisions to institutionalize their children. There was a suggestion, however, that graduates from higher SES homes were more likely than their low SES counterparts to enter an institution. Of the graduates who lived in the community, approximately 75 percent were in sheltered employment and the graduate's level of mobility seemed to be an important factor in their employment status. The graduates in sheltered employment were noticeably better off in terms of community integration and recreation and their parents made less use of community support services. It was noticeable that not one graduate was in open employment (either at full- or under-rate wage levels) - a result which at least initially would seem to indicate that employment opportunities available to Christchurch graduates are somewhat restricted.

Several studies have been made of mildly retarded special class graduates. A study of Otago work-experience graduates was undertaken by Wilden (1974). It was found that while 84 percent of the graduates surveyed (N = 85) were in open employment, integration with the community for many of the graduates was noticeably limited and there seemed to be a clear need for additional community provisions. Similar findings were obtained by Cosson and Wilton (1977) from a survey of Wellington special class graduates. The postschool adjustment of persons who had graduated from work-experience programmes was compared with that of three other groups: persons who had graduated from intermediate special classes; persons who had graduated from a regular secondary school (low stream) class after promotion from an intermediate special class; and a group of 'slow learners' (who had been referred by their teachers for placement in a work-experience class but had not been admitted following their assessment by school psychologists (WISC IQ range 78 to 90). Approximately 85 percent of the mildly retarded group and 90 percent of the slow learners were in open employment, but the mildly retarded groups were noticeably less well off than the slow learners in terms of both employment (lower job status, shorter job tenure and lower wages) and social adjustment, and their poorer achievement appeared to be virtually independent of the types of special education they had experienced.

Vincent, Wilton and Keeling (1979) found that little more than half of the graduates in Christchurch work-experience classes were in open employment six months after school graduation. Comparisons were made between the four work-experience programmes operating in Christchurch and the graduates of one school (School X) appeared to have made a somewhat more successful employment adjustment than the graduates of the other three schools. It is interesting to consider these results in conjunction with those obtained in the study of work-experience programmes (Wilton, Vincent and Keeling, 1979). It is noticeable that in School X the pupils spent more classroom time in work-experience activities than the pupils of the other schools. Clearly the low proportions of time spent in work-experience and social activities (which was found to characterize *all* work-experience programmes), and the relatively low rate of employment observed in programme graduates may well be connected. The results at least raise questions about the appropriateness of extant programmes in Christchurch work-experience classes. The securing of open employment by handicapped children is of course very much dependent upon the adequacy of current economic conditions. Over the past decade a number of serious difficulties have been apparent in the New Zealand economy (Pryde, 1979) and it is probable that the operation of these factors is reflected to a degree in the Christchurch follow-up study.

The need for educational provisions for mentally retarded children (and other handicapped groups) beyond the school years is a further matter which will need to be examined. A case study by Codd and McIlroy (1979) was concerned with the effects of a reading clinic programme on the language development of a special class graduate. The subject had shown expressive-aphasic symptoms from an early age and the programme was focused on these difficulties. After 18 months in the programme, the subject showed sizable gains (approximately 2 years) in reading skills, and interestingly, very substantial gains in expressive language development. The study indicates that specific language difficulties and mental retardation are sometimes interrelated and that teaching strategies which take account of such difficulties can be very effective. It would indeed be useful to know the extent to which specific language/speech difficulties characterize mildly retarded and intellectually handicapped children. Given the limited access which such children currently appear to have to regular speech therapy services, some changes in specialist provisions might need to be considered. The results of this study also suggest that special class graduates do not stop being able to learn when they leave school and if this example is reasonably typical, as seems likely, postschool educational provisions for mildly retarded children should certainly be seriously considered.

The remaining study of postschool adjustment was undertaken by Thompson (1974) who was concerned with the social aspects of employment of the deaf. A group of 31 deaf adults and a random sample of 50 Auckland employers were interviewed. All of the deaf adults were in open employment and most had graduated from a special school for the deaf. While a wide range of jobs were apparently available to deaf persons, the data suggested that pupils who graduated from a special school had not been given adequate preparation for employment and postschool adjustment. An examination of the nature and characteristics of programmes currently operating in schools and special (unit) classes for deaf children seems a logical next step.

There is a clear need to examine the employment and social opportunities available to intellectually handicapped and mildly retarded school leavers, as well as those available to other special educational graduates. There is also a need to examine the content and conduct of extant special educational and after-care provisions for handicapped children. Studies to date provide no grounds for complacency regarding current provisions - especially with respect to mildly retarded children, and the lack of information on other handicapped groups is both conspicuous and lamentable.

Current State of the Art

In the past decade research on special education in New Zealand has shown modest but noticeable growth. It is equally clear, however, that like Thursday's child it has far to go, and that there is a need for a very considerable expansion of special educational research activities at preschool, school and postschool levels. Perhaps the most urgent need is to document fully what is currently happening with respect to special educational and social provisions for exceptional children during the preschool years, in schools and other educational institutions, and in the postschool period. Such documentation would need to include a specification of who is currently receiving (and not receiving) special educational provisions and on what basis, and a determination of the effectiveness or otherwise of extant provisions. Most research to date in New Zealand special education has been psychological in nature. Clearly there is also a great need for sociological and politico-economic analyses of special educational conditions, policies and issues.

Several issues which at present occupy centre-stage in overseas special educational research have already reached New Zealand in one way or another and will also need to be addressed more vigorously in the near future. The issue of mainstreaming has already been mentioned. It needs to be realized that pressure for mainstream special educational provisions in the United States came largely from parents of handicapped children who were dissatisfied with traditional special educational provisions for their children, and frustrated over bureaucratic protection of the status quo. Whether similar pressures will emerge in New Zealand is unclear. If current facilities are not as 'special' as they need to be however, and if the just concerns of parents are not heeded through lack of knowledge of, and/or interest in this situation, a replication of the U.S. situation seems a highly probable outcome. There is a need to look carefully and critically at the legal protections for children and families in current educational and special educational legislation.

A group of solicitors with whom the writer has been associated has been considering the need for changes in the current legislation - at present the rights of the professionals are very far-reaching, while those of the parents are noticeably difficult to discern. At the same time, the courts are clearly not a suitable place for deciding on the appropriateness of particular special educational strategies - a situation which has occurred and is occurring in the United States. If quality special educational provisions for exceptional children can not be assured, however, the need for careful legal protection of children's and parents' rights is essential. There is a clear need to develop quality special educational provisions in New Zealand. Such development would clearly include quality teacher training and retraining as well as the development of appropriate specific special educational curricula, and evaluation of programme development (via empirical research) should be included as an essential component of the enterprise. All of this is not meant to imply that mainstreaming is merely another 'gimmick'. There has been a widespread realization of the importance of maximizing the social contacts between exceptional and other children so that the social learning difficulties of exceptional children are not exacerbated at preschool or at school as a result of exclusive exposure to, and interaction with, other atypical children, and so that reciprocal understanding between exceptional and other children (and their parents/teachers) can be facilitated throughout childhood. As mentioned at the outset, mainstream special educational facilities can not be considered in isolation from the quality of extant regular class provisions for all children, and can not be expected to work as well as, or better than traditional facilities unless they are in fact (as well as name) special. A very considerable expansion of research on the development and evaluation of mainstream special educational provisions is needed.

The provision of early intervention programmes for handicapped children has also been considered, and clearly there is an urgent need for an expansion of research attention to the development and evaluation of such programmes in New Zealand. A related issue which will also need to be considered is the interface between early intervention and school provisions for children with special needs. It seems probable that to the extent that effective early intervention provisions can be developed for children with special needs, the nature of their subsequent school special educational provisions will need to be reconsidered and modified if the impetus of effective early intervention is to be maintained and consolidated.

It is clear that research in New Zealand special education is almost exclusively a university enterprise - either theses, dissertations or staff research. It is equally clear that such a basis is insufficient for the research needs in this area, and that the involvement of a wider section of the educational and special educational community in special educational research is essential. The advocacy of such involvement presupposes a willingness on the part of special educators to undertake research and an acknowledgement by such persons of the necessity for those who wish to engage in research to acquire the necessary competency to undertake research, or to obtain the advice and assistance of those who already have it. While poorly conducted research may well be preferable in general to no research at all, it will certainly not provide a useful basis for educational or social decisions and may well confuse rather than clarify the issues at stake.

One of the problems which may be limiting the integration of research and policy/practice in New Zealand special education is the relative non-availability of research-oriented journals to New Zealand special education teachers and administrators. The major avenues of publication of relevant research on New Zealand special education are four New Zealand journals - *The New Zealand Journal of Educational Studies*, *Mental Handicap in New Zealand*, *the New Zealand Speech Therapists Journal*, and *The New Zealand Journal for Teachers of the Hearing Handicapped;* and three Australian Journals - *The Exceptional Child* (formerly *The Slow Learning Child*), *The Australian Journal of Special Education*, and *The Australian Journal of Mental Retardation.*

These journals would seem to provide sufficient space for the current volume of New Zealand special educational research - though if this volume was to increase (as is to be hoped) the need for an expanded local avenue of publication would soon become apparent. Thought certainly needs to be given to ways of increasing teachers' and administrators' access to available research information. At present relevant journals are held by most university and Teachers College libraries and the Department of Education Library in Wellington. Costs of journals are certainly increasing but perhaps these could be maintained or even substantially reduced if circulation could be increased. If sufficient inducement was given to schools and School/Education Boards to purchase at least some of the relevant journals (perhaps some forms of sharing arrangements could be developed!) - and to consult them, the benefits would probably be very widespread.

The current state of the art of special educational research is probably best described as 'distant', i.e., conspicuously removed from the area in which significant educational and social decisions are made. Perhaps the word 'esoteric' would characterize the activity of special educational research in the minds of many New Zealand teachers and special educational administrators. It would appear that special educational research is not viewed by either of these groups as an essential basis for programme or policy decisions. If this is the case, it is certainly not a problem which is exclusive to educational research - nor should it be viewed as a peculiarly New Zealand educational problem. Indeed a gap between educational researchers and practitioners/administrators almost certainly characterizes the status quo of educational systems in most if not all western countries. The fact is that relatively few administrators or teachers have the necessary background to interpret research studies, and even if a bigger proportion had such a background the current store of knowledge is lamentably inadequate as a basis for classroom or policy decisions. Clearly the two problems are linked - there is a limited store of knowledge *because* relatively few teachers or administrators are equipped to undertake or interpret educational research. The problem is thus partly cognitive, i.e., there is a clear need to achieve a better level of research literacy on the part of teachers and administrators. At the same time, it is abundantly clear that the problem also has attitudinal aspects. It is one thing to be able to undertake or interpret research studies and quite another to view such activity as an essential basis for classroom and policy decisions. A question which must be addressed is 'what currently determines the classroom and policy decisions of teachers and administrators?' It is to be hoped that sensitivity to consequences of administrative or teaching strategies is an essential component of the current modus operandi of special (and regular) education teachers and administrators - especially in the case of changes in particular teaching and administrative strategies implemented by such persons.

There is perhaps a widely accepted belief among administrators or teachers 'that in the last analysis, each of us stands alone', and that they should thus evaluate their own actions in the light of their particular (and unique) experience. Such a frame of reference would certainly lead to a preference for introspective and subjective evaluation of actions. To some extent, such an attitude is wholly commendable and it is indeed part of what we usually understand to be a characteristic of a truly professional teacher or administrator. It is also true that nomothetic research can never tell a particular individual what they should or should not do in a particular teaching or administrative situation with particular children (Coladarci, 1956). It is equally true, however, that teachers or administrators do not stand completely alone, but are a part of a network of influences on children and that the effect of particular administrative or teaching strategies must be considered in the light of other extant influences. As teachers or administrators we are thus typically in the position where we are unable to tell from our experiences or perceptions (leaving aside the problem of their complexity as data) what the consequences of teaching or administrative strategies are, and to the extent that this is true we need to get outside our own perspective to find out what is happening or what has happened. In one sense educational research (including special educational research) is merely a systematic way of finding out such things.

At present relatively little educational research is being done in New Zealand (i.e., in comparison with agricultural research, medical research, etc.) and undoubtedly New Zealand special education reflects this fact. It seems very likely that very little expansion of special educational research will occur unless teachers and administrators understand the necessity for it and have better access to research information, and unless more teachers and administrators become actively engaged in the research enterprise. The New Zealand Department of Education has recently expanded its research staff, and it is at least possible that education boards will make similar appointments. Hopefully the activities of staff appointed will contribute noticeably to future developments in policies and provisions. It would indeed be a tragedy, however, if Department and Education Board officers were led to believe that 'research isn't their line' and 'is best left to the boffins'. What needs to be appreciated by educationalists at all levels is that we all need what research can yield. We must certainly be aware of the limitations of research, but it is equally if not more important that we are aware of our own gnostic limitations - an awareness which objectivity should reveal and compel us to heed, in special education, and in education generally.

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Commentary

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The past decade has seen steady growth in research into exceptional children/special education. There is considerable research activity currently under way in most university education departments, some psychology departments, at least one psychopaedic hospital, and in some voluntary organisations.

A sampling of the 50 or so research articles published in the last decade and reviewed by Dr Keri Wilton in his paper[1] includes work on parents' perceptions of special educational provisions, speech therapy provisions for IH children, social participation of special class children, behaviour modification programmes, follow-ups of special class graduates, early intervention with moderately subnormal children, and the diets of cultural-familial retardates.

Research to date on special education in New Zealand has been predominantly psychological. Given that special education is essentially a multidisciplinary domain, there is a need for sociological and philosophical perspectives and for political and administrative analyses in the future.

Research in this area is largely characterised by small scale action research which deals with existing educational or social units. This reflects two factors. First, the large number of questions thrown up by potential consumers of research, in the areas, for example, of integration ('mainstreaming'), early intervention, classroom and family problems, specific learning disabilities, work experience etc. Second, the long-standing recognition by researchers of the necessity for an ecological approach. Workers in this area recognise that contextual factors influence the way in which exceptionality is defined and that exceptional children often have profound effects on their home and school environments.

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1. Keri Wilton, *Research on Special Education in New Zealand.*

One consequence of such research is the difficulty of imposing a traditional, tight research design in which the influences of different variables are systematically investigated. Applied behaviour analysis paradigms overcome this problem with some, but not all, of the research areas.

Two problems were identified in the field of dissemination of research findings:

1. Problems of producer-initiated research: of the 43 published studies with an empirical basis cited by Dr. Wilton, only 12 were readily available in the form of a New Zealand journal article or book. Of the remainder, 12 had been published in Australian or American journals, 3 were 'in-house' publications, and 16 were unpublished theses.
2. Problems of consumer-initiated dessimination: concern was expressed that researchers are not perceived as being part of the system of special education in this country. For example, university personnel who are actively engaged in research into the transition of handicapped people from school to work were grossly under-represented at the invitational OECD seminars on that topic that were held in this country in 1979. Concern was also expressed that so few potential consumers of special education research were present at this conference. If policy-makers do not take cognizance of research findings, there is a real risk that researchers will direct their efforts into more rewarding areas - perhaps away from applied research.

Even if policy-makers sometimes do not pay due regard to New Zealand research into special education, a good deal of it has policy potential and this is increasingly being recognised by parents of exceptional children. For example, when the results of Project CHILD are finally published, organizations such as SPELD will almost certainly use them to bring pressure on the Department of Education to provide services for children with specific learning disabilities. Similarly, results from research on early intervention and from integration studies, will have considerable political implications.

Now that the Department of Education is engaged in contract funding, one of the major issues which will have to be resolved will be determining research priorities. A study presently being undertaken by the writer will provide guidelines on this theme during 1980.

To conclude, special education research is 'alive and well', 'close to the action', but 'in need of nurture' from those who should be using it to make rational decisions about the future forms of special education in New Zealand.

Guidance and Counselling Research in New Zealand

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An obvious first step in this paper is the general one of suggesting definitions, making stipulations, and setting boundaries. These preliminaries are needed in order to answer three questions: What is to count as research? What is meant by guidance and counselling? How is the material to be selected for review?

Considering that this is a review of research on a substantive topic and not a critique of research itself, it would be inappropriate to dwell on the first of these questions. But some attention to it is necessary, because if strict criteria were to be applied, the list of research reports on guidance and counselling in New Zealand would be shorter than the one compiled here.

Answering his own simple question, 'What is research?', the simple and acceptable answer by Tuckman (1978) was that it is a systematic attempt to provide answers to questions. Less acceptable, however, was one of his five characterisations of the research process - empirical - at least in the strong sense in which he elaborated it. Empiricism in this sense is not, in my view, a necessity for research in education generally or guidance and counselling in particular. In support of this contention I shall later argue that some of my own work should count as research, although it would not meet Tuckman's stipulation. At this preliminary stage, I should like to draw support from a paper by Nuthall (1975).

A paper presented at *Research in Education in New Zealand: A Balance Sheet*, First National Conference of the New Zealand Association for Research in Education (NZARE), Victoria University of Wellington, 7-10 December, 1979.

Advocating variety rather than stereotype in our concepts of educational research, he proposed five major categories of research activity - informative, evaluative, innovative, explanatory, and analytic. In fairness, it should be said that Tuckman's own research contributions and his own explanations of research do in a sense encompass all of Nuthall's views. What is attractive about Nuthall's ideas and daunting about Tuckman's is the possibility that worthwhile educational research need not involve the management of a complex enterprise involving statistical analyses of hard data. Research needs to be connected with reality, and sensible answers to real questions may well depend upon painstaking data collection, but there is also a need for research of other kinds.

The review that follows reflects a broad rather than a narrow view of what constitutes research in guidance and counselling. Indeed it will be obvious that some of the material extends beyond even the generous boundaries set by Nuthall. In this first major review of a fast-growing field it seemed important to take a wide sweep of the literature. Included therefore are not only reports of tests of hypotheses based on hard data, and the typical behavioural analysis designs, but also reports of surveys and evaluations based on data of varying degrees of 'hardness', as well as comments and recommendations arising from both reflections on experience and survey findings.

The second preliminary task is to try to define guidance and counselling as these terms are understood in education and related services in this country. Guidance and counselling are provided in other than educational settings, and it is difficult to distinguish them from social and community work and psychotherapy, and from various other kinds of helping such as teaching, remedial work, advising, supervising, pastoral care, nursing and paramedical therapies. Although the older term, guidance, is still widely and appropriately used in education, it seems in general to be losing popularity compared with the related term, counselling. Many people in different professions now claim that they do counselling, and the term is becoming part of more and more job titles and descriptions. This makes it difficult to determine exactly what the terms guidance and counselling refer to and who performs those activities.

For present purposes some recent statements originating within New Zealand may be helpful:

> When we speak of guidance we shall have in mind all the influences in a school that bear on choices and decisions that pupils make in respect of their own personal, educational and vocational concerns... We see guidance as a network of influences - some of them formal, others informal and incidental - which, taken together, reflect a school's awareness of its responsibilities to its pupils as persons.
>
> (Department of Education, 1971, pp.4-5)

> Counselling is both a process and a relationship. It is a process by which persons evaluate themselves, make choices, and decide on courses of action that are consistent with those choices. This process brings counsellors and their clients into relationships requiring trust and understanding.
>
> (Department of Education, 1971, p.5)

> Counselling is a dialogue in which one person helps another who has some difficulty that is important to him or her. It may be psychotherapeutic or guiding or problem solving and may be practised under a counselling agency or in the context of other professional work or by trained volunteers.
>
> (Nuthall, 1978, p.3)

> The term counselling is used here to describe the various techniques and methods by which people can be helped to understand themselves better and to be more effective... counselling techniques have wide applicability... the expert counsellor is seen to have at his disposal a range of methods... Each method counts as counselling when certain other conditions of the relationship are met. These conditions are of an ethical nature and include the following: a higher degree of confidentiality than is normally expected of, say, teachers; an insistence on the voluntary nature of the relationship; and an emphasis on the personal responsibility of the client for her own behaviour.
>
> (Munro, Manthei and Small, 1979, p.1)

The third preliminary task is to stipulate further the criteria applied to the selection of materials. It was decided to limit these to what had originated within New Zealand from 1970 to 1979 inclusive. Materials were to be retrievable in the sense of being produced in a form which could be obtained and read. These consisted of theses and research papers deposited in university libraries or departments, articles published in New Zealand and overseas journals, and monographs published by various organisations. As implied in discussing the other two preliminary tasks, the selection of articles within those criteria still posed problems. Both in theory and practice, the boundaries of guidance and counselling cannot easily be set. It is likely therefore that there will be both overlaps with other fields surveyed in this series, and gaps between the fields.

The time limit of 1970 was set partly for the convenience of marking off the decade ending in 1979, and partly because it was close to an important time in the history of guidance and counselling in New Zealand. In 1968 the Department of Education announced a plan for a more rapid expansion of guidance and counselling in secondary schools than hitherto, and in 1969 the first official policy for such services was released. These changes seemed to prompt many practical changes and also various investigations, reflections, and discussions - systematic and unsystematic. The benchmark of 1970 also lies close to the end point of Winterbourn's history of guidance services. So far as I am aware, of the studies published prior to 1970 only four were left unmentioned by Winterbourn. Of these, two were closely related to guidance and counselling (Shouksmith and Taylor, 1964; Buxton and Small, 1966), and two were less closely related (Parkyn, 1959, 1967; Small, 1966).

Historical Studies

A number of the reports reviewed referred to early developments in guidance and counselling before introducing current issues, but three studies were almost entirely historical in emphasis (Dawson, 1972; Sutch, 1972; Winterbourn, 1974). Of these, the last was clearly the most valuable. Winterbourn was himself closely connected with the beginnings of guidance and in his retirement he had access to important primary sources. This comprehensive and detailed study is essential for a full understanding of present provisions.

General Surveys, Recommendations, Criticisms

The 24 items in this group divided conveniently into an earlier group of 15 (1970-74) and a later group of 9 (1975-79). The major document in the earlier period was the Renwick Report (*Guidance in Secondary Schools Report of a Working Party*, Department of Education, 1971) often known as the Working Party Report. Besides its official sponsorship, it was notable in that it rested its recommendations upon a comprehensive survey of schools' guidance and administrative arrangements - both traditional and emerging. One result was that the notion of a guidance network became popularised. This term seemed preferable to the view of guidance services emanating solely from a guidance counsellor, as was implicit in previous official policy. Six items from this early period were comments on the Renwick Report (Kelly, 1972; Meates, 1972; Mundy, 1971; Post-Primary Teachers Association, 1974; Print, 1972; Webster, 1972). These evaluations were generally favourable, the main criticisms being against the proposed change of title from 'guidance counsellor' to 'guidance teacher' and the de-emphasis of personal counselling. Another three items, all from the Educational Development Conference, strongly recommended the expansion of guidance services at all levels of education (Educational Development Conference 1974a and 1974b; Boyd and Panckhurst, 1974). No obvious consequences followed these activities. Five other contributions consisted of varied assessments and recommendations which likewise made little impact (Webster, 1970a; Small, 1970a and 1970b; Department of Education, 1973; Melville and Hermansson, 1974). Webster's article deserves special mention, however, because of its remarkably prescient view of major issues in guidance and counselling in New Zealand secondary schools.

In the period 1975-79 two major works appeared, the McCombs Report (*Towards Partnership*, Department of Education, 1976) and the Johnson Report (*Growing, Sharing, Learning*, Department of Education, 1977), each recommending the expansion and strengthening of guidance services. The latter was the more controversial, but critics approved of the proposals about guidance and counselling, while arguing that they were too generalised (Devaliant, 1978; Hermansson and Bernstone, 1978; Post-Primary Teachers' Association, 1979). Of the remaining items, Small (1976; 1979) contributed two general reviews, the latter to an international survey, Crawford (1976) urged, as did the Johnson Report, more specific provisions for guidance within intermediate schools, and Glynn (1976) presented challenging plans for student self-management in secondary schools.

Descriptions and Evaluations of Services

At the beginning of the decade three contributors described guidance provisions as they existed in their own schools in the late sixties, and made a variety of recommendations (Wadsworth, 1970; Donaldson, 1971;

Print, 1971). Later, two major surveys were organised by the Department of Education as evaluations of the 'pilot' schools (later to be called 'network schools') which were established in 1974 and 1975 with additional intramural and extramural provisions for guidance and counselling. Panckhurst (1975) reported on the setting up, organisation, and effects of the programmes in the first five schools. Following an examination through questionnaires and interviews of teachers' and students' involvements and attitudes, it was recommended that the scheme be continued and extended. The greatest needs, Panckhurst believed, were for improvements in consultation and communication, more cooperation with support staff, better use of specialist staff, and increased staff training and involvement. Using similar procedures, Oliver (1976) conducted a second evaluation of these same schools and added a baseline evaluation of the next five. Topics included social and vocational education, discipline, use of supporting services, types of student problems encountered, and the use of guidance time. His conclusions and recommendations were similar to Panckhurst's, but with a stronger emphasis on the need for staff training. He concluded that attitude changes in staff and students could not be attributed alone to the extra guidance provisions. It is regrettable that neither of these two reports is readily available.

Two other items in this section also gave detailed information about guidance services in secondary schools. Newport (1977) surveyed five schools, asking principals, counsellors and students to describe and evaluate various aspects of the services. It was found that most student problems were educational and vocational, that female students were more likely to seek counselling, and that among older students, advice was more often sought from friends and parents than from counsellors. Small (1976) summarised work records gathered by three guidance counsellors - Strang (1974) and Wadsworth (1970), referred to elsewhere in this review, and Munro, whose previously unpublished data constitute perhaps the most detailed records in any literature on this subject. In fact, it is so detailed that it is impossible to interpret concisely. Table 1 gives a revised and updated account of the material published by Small (1976), although a heavily edited and misleading version appeared in Small's 1979 article.

Table 1: An Analysis of One Guidance Counsellor's Activities at Papanui High School 1970-1978

Part I : Casework

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Total School Roll as at 1st March		1075	1110	1148	1158	COUNSELLOR ON UNIVERSITY TRAINING COURSE	1280	1279	1341
Guidance Personnel	1 G.C. 1 Boys C.A.		1 Guidance Counsellor 1 Boys Careers Advisor 8 Tutors				1 G.C. 1 G.T. 1 Boys C.A. 8 Tutors	2 Guidance Counsellors 2 Guidance Teachers 4 Deans (Senior Admin. Staff)	
								Full Network	
Total Number of Cases	177	241	271	242	212		262	232	209
Boys % of Total	20.5%	40%	9.6%	15.7%	9%		14.5%	18.5%	17.2%
Girls % of Total	79.5%	81%	90.4%	84.3%	91%		85.5%	81.5%	82.8%
% Self-Referral for Initial Interview	61.0%	67.2%	68.6%	66%	78%		73.6%	80.6%	86.1%
Counselling Cases (Educational, Personal)	99	118	132	118	82		102	94	105
Boys % of Total	36%	40%	20%	32%	18%		36%	30%	20%
Girls % of Total	64%	60%	80%	68%	82%		64%	70%	80%
Self-Referral Initial Interview %	28%	33%	36%	36%	44%		33%	52%	75%
Self-Referral Subsequent Interviews %	66%	49%		69%	81%		78%	80%	91%
% Cases Senior School F5-7	-	25.5%	20.5%	13.5%	16%		28.5%	35%	45.7%
% Cases Junior School F3-4	-	74.5%	79.5%	86.5%	84%		71.5%	65%	54.3%
Number of Interviews Per Case									
One	37%	35.5%	61%	54%	58.5%		23.5%	42.5%	54.3%
Two-Four	39%	44%	28.5%	34.7%	31.7%		28.5%	41.5%	30.5%
Five or More	24%	20.5%	10.5%	11.3%	9.8%		48%	16%	15.2%
Parent Interviews	17	23	22	24	20		31	41	25
Home Visits	4	24	12	8	9		7	9	4 plus family counselling 1978 only

Table 1: An Analysis of One Guidance Counsellor's Activities at Papanui High School 1970-1978

Part II : Consultation

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Consultations with Agencies (e.g. Psych. Service, Social Welfare, etc.)	48 meetings or phone	85	103	101	64	COUNSELLOR ON UNIVERSITY TRAINING COURSE	92	63	42
Analysis of Needs	6 meetings	4 meetings		4 meetings	16 meetings		27 meetings	48 meetings Guidance Cte. Liaison Cte. Admin. (Eve.)	61 meetings
Implementing Plans									
Classification of New Entrants	21 hours	20 hours	24 hours	20 hours	20 hours			10 hrs (shrd)	7 hours
Visits: Contributing Schools	12 hours	10 hours	30 hours	25 hours	29 hours		29 hours	5 hours	4 hours
F3 Orientation Programme		13 hours	13 hours	15 hours	15 hours		16 hours	17 hours	9 hours
Reorganisation of Courses	4 hours	14 hours	4 hours	4 hours	2 hours		1 hour	9 hours	1 hour
Mother Help, Reading, Groupwork					14 hours		3 hours		
After School Club F3 Boys					52 hours				
Group Counselling					73 periods		18 periods	8 periods	20 periods
Behaviour Modification							14 hours	8 hours	5 hours
Social Education Groupwork								38 hours	43 hours
Consultations with Staff	no record	39	31	51	88		130	121	79
In-Service Training - Staff				18 hours (tutors)			17 hours 17 hours (tutors)	(leadership) 48 hours	2 hours
- Regional							16 hours (Social Ed.) (Continuing Edu.)		12 hours (Counsellor)
Dip.Ed. (Guidance) students			30 hours	48 hours	36 hours		28 hours	29 hours	31 hours
Other students							18 hours	19 hours	14 hours
Community Lectures & P.T.A.s	2 hours (P.T.A.)	13 hours (P.T.A.) (lectures)	4 hours (lectures)	4 hours (lectures)	7 hours (P.T.A.) (lectures)		4 hours (lectures)	4 hours (P.T.A.)	17 hours (P.T.A.) (lectures)
Other Parent Interviews	no record	43	33	29	31		45	30	27

Table 1: An Analysis of One Counsellor's Activities at Papanui High School 1970-1978

Part III : Teaching

		1970*	1971	1972	1973	1974	1975	1976	1977	1978
Social Education	Form 3	110 periods	121 periods	147 periods	68 periods	27 periods		3 periods		
	Form 4		72 periods						38 periods	43 periods
	Form 5		2 periods							
Liberal Studies - General			2 periods							6 periods
Study Skills	Form 5		15 periods			3 periods		5 periods		
	Form 6		5 periods							
Career	Form 4				15 periods			30 periods		
	Form 5							17 periods		35 periods
	Form 6 & 7							10 periods	30 periods	30 periods
Social Studies	Form 3					140 periods				
Remedial English								10 periods		30 periods
Liberal Studies Volunteer Service Within								31 periods	36 periods	
Liberal Studies Interpersonal Skills										48 periods

Notes

1. 1 Period = 40-45 minutes 1970-76. Thereafter = 1 hour.
2. Form 4 Social Education 1971 Classroom-based content-oriented. 1977-78 group work 2 themes: Knowing Myself, Getting on with Others.
3. Social Studies teaching undertaken 1974 because of a staff shortage - slow learner class 8 periods a week. 6 Social Studies, 2 Social Ed.
4. Form 5 Class Teaching programme 1976 low stream only. 1978 9 week unit for all 5th forms begun.

* Term 1 & 2 only

However, perhaps the most significant article in this section was that of Thomas, Pohl, Presland, and Glynn (1977). They described how the members of the Mangere Guidance Unit achieved their aim of providing a behaviour analysis approach to handling behaviour and learning problems, and assisting students, teachers, and parents with the development and maintenance of adaptive behaviour. The programme assisted individuals, groups, and whole classes, and also provided in-service training for class teachers.

Roles and Functions of Personnel

Three contributions to this section consisted of comparisons between two types of personnel and made suggestions about their roles and functions - psychologists and counsellors (Brew, 1970), counsellors and careers advisers (Dawson, 1973), and teachers and psychologists (Bowler, 1979). Small (1978c) gave a theoretical analysis of three possible views of guidance counsellors, Duley (1979) explained his role as a 'careers officer', and Byrnand (1976) analysed the results of a questionnaire survey of 27 guidance teachers.

Two masters theses were the most significant works in this section, each being based upon high returns from national surveys. Strang (1974) analysed the settings, attributes, and role behaviours of 85 percent of guidance counsellors, and examined relationships between these factors. McDiarmid (1979) sought to determine the perceptions of the guidance counsellor's role by analysing questionnaires from 93 percent of counsellors and their principals. Role overload for counsellors, and lack of purpose and poor definition of the aim of guidance programmes were major problems. Other problem areas were conflicts of interests, differences in role expectations, and differences in evaluation of the importance of certain activities.

Empirical Studies of Educational Guidance

Four studies in this category focused on fourth and fifth form students. Webster (1970b) published the results of an experimental study showing social and intellectual gains following a special intervention with a fourth form class for two terms. However, the statistics and deductions were strongly criticised by Livingstone (1971). In a correlational study of fourth and fifth form secondary school students, Ballard (1972) showed that their educational aspirations and expectations were closely related to the expectations they perceived significant others held for them. An attitude scale used in this study appeared separately (Ballard, 1974). Testing four months apart, Tuck (1972) found that fifth form boys' estimates of their future School Certificate performance became more realistic, although, as hypothesised, those with unrealistically high (or low) vocational aspirations tended to over-estimate (or under-estimate) their abilities. According to Prenter and Stewart (1972) in their study of fourth form girls, high vocational aspiration was related to high intelligence, superior classroom performance, and high socio-economic status. Low aspiration was related to membership of a family with more than four children, and, with low ability girls, their mother's occupational status.

Reviving earlier studies by Parkyn (1959 and 1967) and Small (1966), but using computerised multivariate analyses, Cooper (1971) confirmed Small's findings: the most important ingredients in university student performance were prior academic success, general scholastic aptitude, and reading skills. Palmer (1972) surveyed 429 university students to discover information related to the transition from school, and concluded that more information and guidance were needed for students, schools, and parents. The sample tended to support a year in Form VII as a preparatory period.

Howell (1974) investigated suspension and expulsion as a means of dealing with behaviour problems, gathering information by means of interviews with school principals. She concluded that these were undesirable measures and recommended that guidance and counselling facilities be expanded.

Three research projects sought to evaluate guidance and counselling by questioning students. O'Connor (1978) compared student perceptions and use of guidance services at two schools. Using pre- and post-tests of three classes of fourth form boys, Turnbull (1978) evaluated the social education programme at his school. In a 'blind' study, Wilson (1976) evaluated counselling sessions by comparing prior expectations and subsequent evaluations with guidance counsellors' views of their own performance.

Two contributions were published overseas. As a means of aiding the interpretation of differences between scores that an individual might get on two standardised tests, Tuck (1974) devised a relatively simple statistical procedure. Sepie and Keeling (1978) found that, among Form I students, underachievement in mathematics was more closely associated with mathematics anxiety than with either test or general anxiety. They suggested that desensitisation could help these underachievers.

Principles and Elements of Counselling

In this section three contributions were general descriptions of counselling and its values (Bryant, 1972; Flower, 1974; Simpson, 1976). Two writers made substantial contributions to the literature by focusing on the problems that arise when middle-class Pakehas try to help institutionalised delinquent adolescents (Hermansson, 1971) and people from various Polynesian cultures (Hermansson, 1974; Metge and Kinloch, 1978). Their work showed an acute awareness of the difficulties of influencing or even understanding people from other cultures in counselling settings.

Another three items had in common the aim of specifying the elements of counselling for training purposes. From the counsellor training programme at the University of Canterbury, Munro, Manthei, and Small (1979) took a broad view of counselling, but in three central chapters they also followed a microcounselling format using examples and exercises. The manual from Massey University by Hermansson and Bernstone (since deceased) (1977), was strongly in the Carkhuff tradition of counsellor training, supplemented by techniques derived from behavioural, transactional analysis, and gestalt approaches. These two manuals were developed from the experience of their respective authors and from informal evaluations of school guidance counsellors and vocational guidance counsellors. From the field of social work at Victoria University of Wellington, Jory (1978) went further than the other two in providing a formal evaluation of the effectiveness of a microcounselling programme in training probation officers, and social welfare institutional staff.

Theories and Principles of Vocational Guidance

In support of the Working Party's Report, Small (1973) held that the principles of vocational guidance provide the most satisfactory rationale for secondary school guidance programmes. He attempted to refute arguments against vocational guidance before advancing positive reasons. In view of the rapid developments in the field since then, the need for such an argument now seems odd. Webster (1976) defined career education comprehensively as preparation not merely for occupation but for life. He discussed key factors in vocational development and argued for an educational rather than a counselling perspective and for the development of a career education programme.

Descriptions of Careers Programmes

The eight items in this category show clearly the shift in emphasis from a few general concerns about preparation for employment (three items before 1975) to specific mention of unemployment and consequences for schools (five items in 1979). Golightly (1973) evaluated the career guidance systems of three schools, categorised as 'traditional', 'guidance conscious', and 'vertical form'. Greensill (1974) described a pre-vocational course for third-year secondary students who were not seeking School Certificate, and concluded that they were as a result more easily able to find permanent employment. Montanjees (1974) described and evaluated a careers programme organised in two schools and concluded that self-knowledge had increased among the students, but that few gained any vocational knowledge.

The most general of the later reports was that of Baker (1979) who discussed criticism that schools were not preparing their pupils for employment. Three other contributors described particular programmes of work exploration and pre-employment designed to help in gaining employment or adjusting to unemployment. Petersen (1979) described a course that began in the third form and became more specific in senior classes. Bedford (1979) showed how lower-ability fifth formers could be helped to cope with a period of unemployment that would be expected for them. An older age-group (15-19 year olds) was catered for in a six weeks pre-employment course described by Devaliant (1979). It was regarded as successful in terms of both students' finding employment and community support for the venture.

Empirical Studies in Vocational Guidance

In this category were a number of studies which showed considerable research skill. Early in the period Baldock (1971) published her analysis and interpretation of the factors which influence the vocational choice of adolescents, based on 3,773 14 year old boys and a random sample of 780 of their parents. Considerable discrepancy was found between the national ideology of equal opportunity and objective reality: social background was the most important factor in vocational choice.

A group of five reports were essentially empirical tests of typologies and theories of vocational choice. Longley (1972) questioned third and fifth form students twice, 104 days apart, in an attempt to assess the usefulness of Super's concept of vocational maturity. He found some warrant for it, but raised many questions. In an experimental study with two groups of fifth form students, Newbold (1975) measured changes in vocational maturity attributable to two terms experience in a work exploration class. Tests and interviews suggested that changes had occurred but a questionnaire did not confirm this. In a longitudinal study following fifth form boys until one year after leaving school, Tuck (1976) tested Super's theory that entry into a career is part of a developmental process. He found the proposed indices of vocational maturity much less useful than the boys' educational attainments and aspirations, and then analysed the nature of developmental theories in the social sciences.

Near the end of the decade Keeling and Tuck (1978 and 1979) began publishing a series of studies of the usefulness of Holland's occupational typology, focusing on scoring procedures and sex differences. These researchers were then engaged in developing a version of Holland's Self-Directed Search procedure which would encourage more client and counsellor activity and interaction in the process of vocational choice.

Another group of studies focused on vocational guidance interviews. Sparrow, McDonald, and Hesketh (1978) found that in terms of expectations, motivation, and self-evaluation, most clients at one centre were helped. Similar conclusions were reached by Garton (1979) following an evaluation at another centre: most clients found the service satisfactory, if not entirely corresponding with their expectations of it. Brook (1977) used a repertory grid to determine the perceptions that 15 to 16 year old students had of vocational counsellors, and concluded that to be effective the latter needed skill, knowledge, prestige, warmth, and understanding.

Three reports examined the transition from school to work. Crawford (1972) studied relationships between vocational guidance, leavers' choices, and labour force participation rates in a large city, and concluded that vocational guidance was needed to counteract the movement of potential employees away from the city. Sass and Sass (1978) described the first-year work adjustments of the leavers from a large school. McEwan (1972) and McEwan and Tuck (1973) carried out a more precise study of work attitudes, job satisfactions and attitudes to school of a large group of first-year trade apprentices and technical trainees. Notable differences were apparent between the two groups: technicians found school more interesting and relevant to their career than did apprentices, but the latter found their work more interesting and satisfactory than did the technicians. Most school leavers expected more vocational guidance than was given, and those who stayed longer at school were the more critical.

Empirical Studies of the Vocational and Social Adjustment of Exceptional Children and Youth

The results of two theses were reported in this category. Thompson (1973) surveyed 80 slow learners aged 16, their parents and their employers, and found that most had a haphazard method of occupational choice and no work experience before leaving school. Major changes were recommended. Wilden (1974) interviewed 85 former experience class students, their parents, and their employees, and also consulted school and Psychological Service records. It was concluded that most students had made satisfactory vocational and social adjustments, and that experience class programmes were satisfactory.

Four studies, all connected with work by Wilton, were published overseas. In the first of these Wilton and Cosson (1977) compared the employment and adjustment of three groups of mildly retarded adults with a group of adults classified at secondary school as slow learners. The mildly retarded groups had made poorer vocational and social adjustments, and it was concluded that special education and after-care provisions were inadequate. Stewart and Wilton (1978) surveyed the post-school adjustments of intellectually handicapped school leavers, focusing on institutionalisation, sheltered employment and community adjustment, and related these variables to sex, parental choice, and mobility factors. In two related studies Vincent, Wilton, and Keeling (1979a and 1979b) examined the content of current work experience programmes in four secondary schools and compared their outcomes in terms of open employment, sheltered employment, employment status, job search skills, job changes, and wage levels.

Recommendations on Behavioural Approaches to Guidance

Perhaps the outstanding feature of the period under review was the enormous and deserved popularity of behaviourism as an intervention model. As a result those faced with problem behaviour and educational failure in children and adolescents were encouraged to look for new ways of dealing with such difficulties - often with dramatic improvements as a consequence. In the professional literature and in educational and welfare institutions, behavioural principles became almost commonplace. Much credit for this must go to Glynn at Auckland: directly or indirectly he was responsible for a large amount of varied, imaginative and useful work of a very high standard. In turn, Glynn has generously acknowledged (Glynn and McNaughton, 1978, p.161) the contribution of Church's stimulus to student projects in Canterbury's *Educational Research Newsletter*, now virtually a behavioural publication.

Most studies in this category were grouped together because they strongly commended the use of behaviour analysis procedures in guidance, counselling, and classroom control of disruptive behaviour. Research data were cited in support of recommendations, and most authors expressed hopes that teachers, counsellors, and psychologists would have closer acquaintance with and commitment to these procedures. (Thomas and Adams, 1971; Thomas, 1971; Fry, 1974; Cashmore, 1974; New Zealand Educational Institute, 1975; Throll and Ryan, 1976; Glynn and McNaughton, 1978; Sanders, 1978).

Behaviourists often encounter resistance, but seldom do objectors express themselves in writing. Only one item was critical of the behavioural model. Small (1978b) contended that there had been insufficient conceptual analysis of the tenets of behaviourism, especially in explaining precisely what happened when changes occurred. Using two similar case studies as illustrations, he critically examined two main approaches to explaining human behaviour, and suggested ways of encouraging fuller explanations of changes.

Recommendations on Special Needs

The nine items in this section were classified into two groups. The first group (Maurer and Dawson, 1971; Barney, 1972; Post-Primary Teachers' Association, 1973; Weblin, 1978; Codd, 1979) made a wide variety of recommendations that would help students with special difficulties - early intervention, parent counselling, the use of special services, better staffing of schools, meeting needs for recognition and self-esteem, remedial education, individual and group counselling, the use of resource rooms, and peer tutoring.

In the second group (Church, 1975, 1978; Glynn, Thomas and Wotherspoon, 1978; Codd, 1978) there was a more explicit adherence to behavioural principles. For example, Church (1978) listed and explained seven teaching skills for meeting the needs of disturbed students, while the other three items likewise showed how behavioural programmes could assist in providing better guidance.

Empirical Studies of Behavioural Technology in Classrooms

Even apart from the many reports of projects in the Canterbury *Educational Research Newsletter* since 1975, the number of items in this category was impressive. Since Glynn's article (1970) was done in Canada, it does not strictly qualify for citation, but because it was so often referred to in research reports, it was included here. Besides this, there were 32 items, including theses, some of which were later converted into journal articles. Since there is a separate review of behavioural analysis research, no attempt will be made to analyse these contributions further. Those included were: Ashe (1971); Ballard and Glynn (1975); Coleman (1975); Coleman and Blampied (1977); Ellery (1974); Ellery, Blampied and Black (1975); Fry (1973); Fry and Thomas (1976); Glynn and Quinnell (1971); Glynn and Thomas (1974); Glynn, Thomas and Shee (1973); Glynn, Wotherspoon and Harbridge (1976);

Jackson (1973); Jackson and Glynn (1974); Johnston (1977); Lewis (1973); McNaughton (1974); McNaughton (1975); Marsh, C.R. (1976); Marsh, J. (1975); Nepe (1976); Palmer (1975); Ringer (1973); Roche (1974); Sanders (1976); Serjeant (1974); Shee (1971); Singh (1978); Streat, Page and Werry (1972); Thomas, Presland, Grant and Glynn (1978); Wilson (1976); Wotherspoon (1974).

The inclusion of behaviour analysis reports under guidance and counselling was justified because of the high probability that such programmes would be implemented by guidance personnel, especially guidance counsellors and educational psychologists.

Teaching Social Skills

Out of the two fields of behaviour analysis and microcounselling, interest is rising in attempts to teach social skills. Kean (1975) described a successful programme undertaken at a kindergarten with six year old autistic twin boys who were subsequently accepted at their local primary school. Wadsworth (1979) gave an account of an attempt to teach interpersonal relationship skills to young inmates of a prison, and gave evidence of the programme's helpfulness. The widespread enthusiasm for assertiveness training also issued in a publication (Manthei, 1979). This handbook distinguished between assertiveness and aggression, and provided a commentary, discussion topics, and exercises on assertive skills, dealing with criticism, and communicating effectively. Manthei (1978) also constructed and analysed a measure of assertiveness developed from the literature and from her own experience in training adult volunteers. By showing, in a sample of 300 males and females, the presence of a general factor loading on 48 items in a 60-item scale, she provided evidence of a unitary trait, contrary to a conclusion in a comprehensive review (Rich and Schroeder, 1976).

Counselling with Parents

The nine items in this group all showed how parents could be helped to overcome severe behaviour problems of children within the home. In three cases the problem was elimination: in four months Cashmore (1976) corrected severe soiling; Harvey (1976) reinstated defecation in 48 days; and Singh (1976) cured soiling in 18 days. Five studies were essentially reports of successfully controlling aggression, temper tantrums, and autism (Bruce, 1970; Fry and Barrer, 1974; Saunders, 1973; Singh, 1978; Small, 1978a). In the ninth instance Fry (1977) taught parents how to use token reinforcement to teach reading at home to 30 primary school children retarded in reading. There was considerable improvement in the children's performance and strong parental interest and cooperation. Behaviour analysis procedures were common to all nine studies.

Counselling in the Community

Two items in this section described the use of counsellors and social workers in medical practices, and the special contributions they made (Lowe and Rainey, 1974; Harray, 1975). Another four contributions described the aims and functions of Youthline telephone counselling services and some of the needs and problems presented by callers (Henley, 1972; Simpson, 1974; Donnelly, 1974; Hattie, 1975). In each case it was concluded that a useful service was either needed or being given. Two other items consisted of collections of papers on the welfare needs of two large cities, with frequent references to guidance and counselling services (Piesse and Lardner, 1974; Wellington City Council, 1977). Raeburn (1973) argued for the use of behaviour therapy methods by social workers in the community, and discussed appropriate cases and suitable programmes.

The outstanding contribution in this section, and indeed a notable contribution to the recent literature, was the report of Nuthall's research (1978) into the counselling resources, training programmes, and needs of a large city. Besides defining counsellors carefully, she provided a census of counsellors working in 68 voluntary agencies and an estimate of their weekly hours of service.

Directories of Community Resources

Finally, the following directories were identified and they are presented without comment: Australia and New Zealand Student Services Association (1978); Community Forum (1978); New Zealand Department of Education (1978);

Fry (1977); Lake (1977); Pacific Islanders' Educational Resource Centre (1978); Rotary Club of St Kilda (1976); Society for Research on Women in New Zealand Inc. (1975).

Measurement

Attention is drawn to the contribution to research in guidance and counselling from skills in measurement and design. As a result knowledge in the field became more complex and precise. The skills were of two types.

One was traditional, coming from statistics courses, enhanced by experience and training, and encouraged by the literature and by electronics. A number of studies reviewed above were analysed by more complicated methods than was common before 1970 - various types of correlations, regression analyses, factor analyses, analyses of variance. Notable examples were Ballard (1972), Cooper (1971), Tuck (1976), and Sepie and Keeling (1978).

The other kind of skill was that characteristic of behaviour analysis research which requires a limited but very rigid range of formats and procedures. All empirical studies of behavioural technology listed above could be regarded as exemplary. The criteria have been stated as 'applied, behavioural, technological, and analytic' (Glynn and McNaughton, 1978, p.ix). Apart from precisely defining and measuring behaviours, the skill lies in the patterning of baseline conditions with one or more forms of treatment, and then showing results in simple statistics and graphs.

Consultation

Another topic cutting across several of those listed is consultation. This is to be contrasted with casework in which direct help is given to clients, and may be defined as follows: an intervention within a voluntary professional relationship in which a work-related problem is solved by helping clients to deal more effectively with other persons or other aspects of their jobs.

The application of behaviour analysis by researchers depended heavily upon involving other people, notably teachers and parents, in change processes. Most of the reports of behaviour analysis could therefore be read as examples of consultation, as also could those classified as counselling with parents. Further research and development work needs to be done on the topic, and it may be, as Glynn, Thomas and Wotherspoon (1978) suggested, that consultation will more obviously become the model for guidance services in future.

Evaluation

What is the relationship between research activities and practical developments in guidance and counselling? Few actual connections are observable, at least in the sense that researchers would probably like to see, namely, that practice would be influenced by research. If the two activities are not entirely separate, then at best the most common feature seems to be that research is an analysis of practice in a post-hoc fashion. It has a critical rather than a formative function.

Guidance and counselling, like education, are practical activities in which most changes are brought about by the pressures of events and the views of practitioners, and seldom as a result of research. This is probably as true of other countries as it is in New Zealand. As Stefflre wryly remarked, 'If we did in the name of counselling only those things which research has proved to be worth doing, we should have a good deal of free time on our hands'. (Stefflre, 1972, p.297). Many of the changes which occur are almost mysterious, and researchers seem unable to suggest or forecast them, or even to monitor and evaluate them while they are happening. Usually all that is possible is subsequent recording that they have happened, and perhaps an evaluation at that point.

A good example is the development of guidance networks. As secondary schools began to get larger in the late sixties, it became necessary for management and administrative reasons to organise schools differently. By the time the Working Party Report had appeared, there were enough informal signs of the value of these new organisations to justify confidence in them, and then to capitalise upon them for guidance purposes. The term 'guidance network' was virtually invented, certainly confirmed, by the Working Party, and the role of researchers was then to catch up with the new practices by descriptive and evaluative studies.

Another example comes from the Psychological Service. At the beginning of the seventies there began to emerge a mode of providing services which was later called 'consultation'. Essentially this meant that psychologists began assessing problems in the environments where they were occurring. The move was a good one, and researchers and teachers of counsellors and psychologists subsequently took it up. Perhaps it hardly matters that it began partly as an economic measure and partly as a means of reducing resistance to the medical model of being interviewed in a clinic. But it does illustrate the conservative nature of research in education.

A third example of change which seems to occur independently of research is the way in which descriptions of students have come into fashion, increasingly with clinical connotations. 'Culturally deprived', 'underachieving', and 'emotionally disturbed' did not go very far in this direction, but 'school phobia' did. Not long ago, it would have been a bold psychologist who would have used this term, but very quickly it gained currency among teachers as well as counsellors. The job of the researcher then was to try to distinguish between truants and school phobics, and to suggest different treatment and control strategies for each group.

A counter-example of course is the terminology of behaviour modification which was introduced to practitioners by researchers and others from outside the school. At least some of the resistance to behaviour modification can be interpreted in terms of the forced use of a foreign language.

The boundaries set at the beginning of this paper meant that there was included a heterogeneous mass of material, ranging from general reflections on guidance and counselling in education and the community, to rigorous work published in refereed journals. In this varied material three main areas of weakness can be discerned. With the outstanding exception of Baldock's work (1971), there were no sociological researches into the guidance functions of education of a scale or quality that would permit reasoned debate. In politics and economics the weakness was even more apparent: despite the obvious scope for such work, there was no sign of any research from these perspectives. It may be that, by default, studies in this field will become the domain of Marxian political economists. The final weakness, elaborated briefly below, was less evident than in the case of the two previous fields: there were signs of highly effective contributions from trained philosophers (Bassett, 1976; Snook and McGeorge, 1978).

These weaknesses directly reflect the extent to which university departments of education, at least since 1945, have been dominated by the psychological foundations of education. The tradition of educational psychology and measurement has been sound in itself but some imbalance has resulted. In defence of departments, it can be said that this imbalance reflected the state of the educational market (or art) internationally. Even in the literature, the modern revival of philosophy of education did not begin until 1955. Sound applications of sociology to education are more recent still, while the contributions of political and economic studies have barely begun.

The wide scope of the literature reviewed may be questioned. Some of the materials were weak by the standard of providing systematic answers to real questions arising from either research or practice. Some amounted to little more than informed comment, and thus fell far short of what is meant by educational research. They were nevertheless worth including as examples of the fact that changes in practice seem to be relatively independent of substantive research. It appears that change results from what may be termed 'developments' - decisions taken as a result of meetings in which balances are struck between deadlines, economic constraints, recent precedents, and general appraisals of the situation. Without approving of actual decisions or of these types of procedure, it is worth remembering that researchers enjoy the luxury of not having to work under such pressures, and that some of the writing was by people close to such 'developments' who wished to record their observations and evaluations.

Other examples of writing which did not qualify as research, but nevertheless as records of 'development work' seemed worth inclusion were the training manuals (Hermansson and Bernstone, 1977; Manthei, 1979; Munro, Manthei, and Small, 1979). As noted above, these works rested upon informal assessments of what proved most useful in training procedures, as a result of experience. Other descriptive studies of services and programmes could also be termed records of developments rather than research. Such work too is not to be disparaged, for it does describe reality reasonably well and therefore contributes something to an understanding of the 'state of the art'. This is not of course to suggest that more rigorous standards should not be applied in future reviews of this kind.

There were a number of soundly based surveys of services and personnel which yielded high response rates. It is understandable that people should respond willingly to inquiries from the government Department of Education, but returns from individual researchers of 80 and 90 percent suggest other motivations, such as the perceived relevance of the survey to the work of practitioners. This is cause for congratulations. Information flows of this kind are important, even if to experts in statistics the activities seem elementary. It is regrettable nevertheless that the most solid data base of all - the Baseline Survey of a few years ago - was inaccessible to researchers outside the Department. Admittedly, there are problems in dealing with such information but the restrictions, as they were once spelled out to me, were indicative of a lack of trust in researchers. Perhaps the Danks Committee on Official Information will suggest ways round this kind of problem.

In future, surveys may need to be conducted on a more mutual and interactive basis than in the traditional way of questionnaires arriving from the Department or a university, and the information on them being sent off to be crunched by a computer and digested into a research report. There is more at stake here than the feelings and dignity of practitioners. Unless there is interaction, researchers probably do not get to grips with real problems as perceived by practitioners. An actual example of a research of this type involves a questionnaire about certain categories of students which is first completed by all class teachers in a school, followed by a meeting of senior staff which assesses the teachers' responses, followed in turn by a meeting between the researcher and the senior staff. The consensus achieved at this final stage forms the data base from which further research and activities will ensue, with feedback to the staff.

This is not necessarily the model for the future, but if this kind of procedure were followed there would be distinct advantages. Although the data would sometimes be 'softer', they would be more 'real' for they would rest on a stronger consensus having been scrutinised by colleagues. The procedure would also involve the staff more intimately, and through its intermediate steps it would quickly show up ill-conceived, one-shot investigations. Compared with more conventional methods, such procedures require more time, more money, more people, and more organisation - and therefore better justification by researchers.

Proposals for research from practitioners could also be treated in somewhat the same way. In the research affiliate scheme at Canterbury, teachers' research proposals are scanned by university staff and inspectorsbefore assistance and allowances are given, and a staff member and a teacher are paired up. If the proposals were fed back to teachers, a team effort might be stimulated and organised, instead of one teacher and one staff member carrying out one piece of small-scale research. More involvement of more practitioners would lead also to better dissemination of research findings. My informal inquiries suggest that very few teachers read the research findings in such readily available outlets as the *set* series, *Education*, or the Canterbury *Educational Research Newsletter*.

Two areas of research stood out as containing examples of high grade research - vocational guidance and behaviour analysis. I should like now to comment upon these developments briefly.

The main researchers in the former area were Keeling and Tuck, who are now embarked upon a series of studies based upon Holland's typology, some of which are now in press. Their work is planned to culminate in a version of the Self-Directed Search suitable for New Zealand use, and one that will represent an improvement on the original, calling for more activity by and interaction between clients and counsellors.

Is it possible to account for the quality and quantity of this research? The backgrounds of the researchers may give some clues. Both were once vocational guidance officers, both had done masters' level theses in vocational guidance, and both had strong prior qualifications in measurement and then subsequent teaching responsibilities in the same field. As colleagues they were thus enabled and encouraged to develop statistical skills in the Neyman-Pearson tradition and to apply them to vocational guidance. Holland's typology and associated research findings proved to be richer in possibilities for both research and practice than the earlier developmental theories. Both men, moreover, were connected with the training of school and vocational counsellors, thus gaining further stimulus to their work. More recently the rapid expansion of vocational guidance services has also acted as an encouragement. These factors probably go some way towards explaining the standards achieved.

As noted earlier, in behaviour analysis the outstanding figure is Glynn. In his case the kinds of factors cited about Keeling and Tuck were less in evidence. It is surmised that from a thorough postgraduate training, Glynn developed the motivation and leadership which has been associated with so much excellent research. Without minimising his achievement, I should like to suggest, however, that other factors have also been important in the sheer volume of behaviour analysis research in New Zealand.

In the first place, the procedures of behaviour analysis, although exacting, are essentially simple applications when compared with conventional correlational or experimental research. Furthermore, by assuming the operation of the most elementary causal mechanisms, and indeed by ruling out other possibilities, the theory too is simple, almost to the point of being simplistic. Thirdly, many practical examples are available in the literature giving conclusive proof of quick and dramatic changes in persistent patterns of behaviour.

In light of these attractions, why is the promise of behaviour analysis not being delivered to schools? Glynn referred to 'a large range of political, administrative, and communication problems to be solved'. (Glynn and McNaughton, 1978, p.161). An example of the last kind is that the typical procedures and reports used in behaviour analysis often do not speak to the needs and experience of practitioners. What the consumers want is usually no more than a behaviour change that satisfies them, whereas the researchers want proof positive, via the Baer-Risely-Wolf criteria, that it was the principles of reinforcement alone that effected the change. My reservations about behaviour analysis are partial, not complete, and are explained elsewhere (Small, 1978a and 1978b). But these reservations are symptomatic of the tension that exists - perhaps must exist - between researchers and practitioners.

Thus the earlier point is raised again: there is a need for more mutual and interactive relationships in research.

Two items (Bassett, 1976; Snook and McGeorge, 1978) were not included in the review because they dealt with broader issues than guidance and counselling. However, they deserve notice for two reasons. First, the topics they dealt with were close to the duties and responsibilities of guidance counsellors, and secondly, better than any other items cited, they showed how philosophical analyses can make direct contributions to research and practice in guidance and counselling. They exemplified to empiricists in the psychological tradition how far and how usefully relevant arguments can be developed from what are mainly conceptual rather than empirical bases. There is a need for more work of this kind, perhaps eventually issuing in books like that of Elliott and Pring (1975).

Except for research of the 'development' sort, studies of counselling were meagre. This was due partly to ethical problems, partly to experimental difficulties, and partly to rapid changes in foci of interest. There has been a move away from pretest-posttest studies of the effects of counselling, such as that of Shouksmith and Taylor (1964). The problems are now seen to lie in how to meet the apparent needs of clients rather than how to measure the effects of counselling generally, or even to compare different counselling theories.

For example, there is now more interest in clarifying the effects on clients of certain non-verbal variables, as Hermansson is doing in a doctoral thesis. A major overseas survey of recent research likewise shows the attention being given to such factors in impression formation and influence (Krumboltz, Becker-Haven, and Burnett, 1979). Two unpublished studies at Canterbury are worth mentioning. Over several years R.J. Manthei has shown that distinct changes in counsellors' perceptions and attitudes are associated with the counsellor training course and that these changes persist and increase one year later. Also for several years, I have been using various methods of trying to relate linguistic indicators of client reactions to those of counsellors. My next project is a study of the personal qualities of natural helpers - those parents, teachers, and students whose interpersonal skills are reliably identified by their peers. Until recently the research literature has provided few examples of studies using low-inference methods, but changes are now evident.

Three topics - consultation, social skills training, and family counselling - seem to be developing fast and to require research. Consultation was earlier contrasted with casework as a method of providing guidance and counselling services. There is a need for a consciousness about consultation so that it is built into training courses and built upon skills in the casework mode of counselling. Behaviour analysis and parent counselling both use consultation, but there is no evidence of research directly on the topic. The teaching of social skills is also capturing interest, especially within set packages or workshops. The production by M. Manthei (1978) of a scale for measuring assertiveness was an important step forward, but more work is needed. The overseas literature on family counselling is expanding rapidly, and handbooks and theses are being produced in this country, but except for Everts' doctoral thesis (unsighted), there has been little formal research. The topic is of some significance because of the number of education service personnel engaging in the work, despite a good deal of official caution about its being beyond the boundaries of schools' responsibilities.

It is appropriate to add a note on sources of and outlets for research. The main sources of the most rigorous research on guidance and counselling were clearly the education departments of the universities. In view of students' thesis requirements and the job specifications of staff, this is not surprising. There were signs of activity by the government Department of Education, but none at all by teachers' colleges. The proposed in-service courses on guidance at teachers' colleges may alter this pattern, although it is relevant to note that university-based research into secondary school guidance and counselling antedated the allocation of counsellor training to universities. University staff have long been expected to do research, whereas this expectation has only recently been proposed for teachers' colleges.

Outlets for research were varied. Some excellent work originating within New Zealand was published in Australia and in the United States of America (but none in Britain), suggesting that local outlets do not meet the requirements of researchers. Without close knowledge of editorial policies, I believe that there are in New Zealand only three strongly refereed journals suitable for guidance and counselling research - *New Zealand Journal of Educational Studies, New Zealand Medical Journal*, and *New Zealand Psychologist.* Others with less rigorous standards are *New Zealand Social Work, Delta, Post-Primary Teachers' Association Journal, Education,* and *New Zealand Counselling and Guidance Association Journal.* An upgrading of the standards of the last might create an alternative outlet for rigorous research, but would have the disadvantage of inhibiting the worthwhile contributions of practitioners.

In conclusion I undertake the risk of selecting from the large number of contributions surveyed a short list of the most distinctive and useful items. In alphabetical order they are as follows: Baldock (1971); Ballard (1972); Department of Education (1971); *Educational Research Newsletter* (1968-); Fry (1977); Glynn (1970); Keeling and Tuck (1978, 1979); McDiarmid (1979); Manthei (1979); Munro, Manthei and Small (1979); Nuthall (1978); Oliver (1976); Panckhurst (1975); Small (1978b); Snook and McGeorge (1978); Thomas, Pohl, Presland and Glynn (1977); Webster (1970a); and Winterbourn (1974).

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Research on the Sociology of Education in New Zealand

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Although certain intellectual achievements rely upon the individual and relatively isolated efforts of scholars, most researchers are heavily dependent upon participation in a community of scholars for support, challenge and encouragement. Such communities are important in shaping the boundaries of debate, giving legitimacy to various enquiries and methodologies and in providing political support in the allocation of resources to research and continuing enquiry. Any assessment of the state of a particular community of scholars is likely, therefore, to consider such matters as indicators of the health of that community. I am sorry to report that, by my assessment, the health of the sociology of education in New Zealand is, at best, uncertain.

The Research Community in the Sociology of Education

It is reasonable to suppose, given the need for membership of a community of scholars that a certain 'critical mass' is necessary before a sufficient variety of debate, capable of articulating alternative views and supporting new initiatives can occur. While estimates of the size of the community of sociologists interested in education in New Zealand are difficult to form, it is clear that the group is small and scattered. If, for instance, the membership of the New Zealand Association for Research in Education is taken as an indicator, those members listing sociology of education as a major research interest number 23, some 10 percent of the total membership at October 1979.

A paper presented at *Research in Education in New Zealand: A Balance Sheet*, First National Conference of the New Zealand Association for Research in Education (NZARE), Victoria University of Wellington, 7-10 December 1979.

Healthy enough, perhaps, though only 17 are members of institutions devoted to supporting research as part of their responsibilities. If, alternatively, the 1978 Ministerial Conference on Education Research background document, *A Directory of Educational Research Workers* is taken as an index, some 23 out of 186 research workers, or some 12 percent, list a topic in the sociology of education as a major interest. They are, by the way, not completely identical with the group belonging to NZARE.

When actual conduct of, rather than interest in, research is taken as an index, the number falls to 17 projects out of some 400, or 4 percent of active research, including higher degree students (Pickens and Boswell, 1978a). It is hard on the basis of these figures to conclude otherwise than that the sociology of education holds a distinctly minor place within the educational research community in New Zealand. Moreover, when actual research activity is taken as the criterion, then substantially less educational research in New Zealand is informed by a sociological perspective than research based on either psychological, historical, curricular, linguistic, or philosophical analysis. This is especially true for research undertaken by graduate students as part of their M.A. or Ph.D. dissertations. Surely an ominous comment on the ability of this particular group of scholars to reproduce itself.

If membership of the Sociological Association of Australia and New Zealand is taken as an alternative index of active participation in a wider sociological community, some nine New Zealand members are listed as having interests in the sociology of education. Three attended the Annual Conference in 1979 and two presented papers, hardly a bold showing. Figures for the New Zealand Conference in 1979 are unavailable but it can be noted that the 1978 Conference collapsed for want of support, a situation unthinkable, for instance, for the New Zealand Psychological Society. The epistemological community of scholars involved in the sociology of education can be said, then, to consist of some two dozen people, roughly half of whom claim to be engaged in actual research, and a pitifully few graduate students swelling the body to slightly larger proportions. Of those actively engaged in research, over half are concentrated at two centres, Massey and Waikato Universities, with whom half of the remaining list also have close ties. One might expect, therefore, that these two universities would be centres of development of research in the sociology of education. The work at Waikato relies on four researchers, Ramsay, Mason, Sneddon and Battersby, while Massey has had, albeit for a brief time, a substantial group of sociologists; Adams, Bates, Chesson, Clark, Harker, Nash, Nolan and Wilson, who might just have achieved some kind of breakthrough but for the defections of Chesson, Bates and Wilson, and the periodic absence of Adams. Other researchers are scattered in ones and twos throughout New Zealand in universities, teachers' colleges, government departments and schools. With no regular research conferences in either sociology or education, contact between researchers has been spasmodic and the opportunity to develop as a community rather than as individuals has been limited. The result has been a definite lack of conversation and debate between scholars who might have been expected to work towards the establishment of a sociology of New Zealand education.

Publication and Debate in the Sociology of Education

It is possible, of course, that New Zealand sociologists of education are sufficiently sturdy and independent to feel little need for intellectual companionship. It may be, for instance, that even without the benefit of community, they are able to research and publish prolifically. Let us consider the evidence.

The most immediately relevant avenue of publication is surely the *New Zealand Journal of Educational Studies*. An analysis of the 200 or so articles published by the Journal in the 13 years since its inception indicates some 9 or 10 papers informed by a sociological perspective, some 4 to 5 percent. Put another way, the sociologists have managed to produce, between them, roughly one scholarly paper every 17 months. Interestingly enough, the authors of four of the published papers are now working overseas.

In the 'alternative' journal *Delta*, over 12 years and some 160 articles, some 40 or 25 percent have been of a sociological bias. Many of them reflect the coursework content of sociology units at Massey University, and also, presumably, the bias of the editor.

Another index of information and support for sociological debate is the incidence of book reviews reporting and evaluating contributions to the field. In this respect, sociologists of education make little contribution to the *New Zealand Journal of Educational Studies*. In 13 years, and some 150 reviews, the Journal has reviewed four books that might be considered of direct relevance to sociologists of New Zealand education: Watson's (1964) book on intermediate schools, the Adams/Biddle (1970) study of classrooms, Mercurio's (1972) book on caning and the

Sydney group's book on adolescence (Connell *et al.*, 1975). Other more general volumes such as Webb and Collette's collection (1973), Forster's collection (1969), Pitts' volumes on class and ethnicity (1974, 1977) swell the number to eight and republication of Somerset's *Littledene* (1974) to nine. Important volumes such as Ramsay's *Family and Schooling in New Zealand* (1975) have been ignored, as has Calvert's *Role of the Pupil* (1975). In a wider context, not one of the books which have contributed to a revolution in the sociology of education in the past decade have been reviewed. Bernstein, Young, Whitty, Bernbaum, Bowles and Gintis, Braverman, Apple, Bourdieu are as completely absent from the pages of reviews as they are from the papers. One may perhaps be tempted to argue that this absence is because the editorial board of the Journal is composed of psychologists and philosophers and lacks the presence of a sociologist who could help inform editorial policy of what is going on in the sociology of education. On the other hand, it is an indictment of sociologists that they have done so little to ensure that the new sociology of education, and the radical theory and critical social analysis that has emerged so strongly in the northern hemisphere over the past decade is present in scholarly debate over education in New Zealand.

What Has Been Going On?

If the frequency of publication is low, what of the content? The diversity of preoccupation and the variety of theoretical allegiance are considerable. As far as the *New Zealand Journal of Educational Studies* articles are concerned, Braithwaite (1967) was interested in education and the economy; Vellekoop (1968) in the migration plans and vocational aspirations of adolescents; Adams (1970) in teacher role; Elley and Irving (1972) in education and socio-economic status; Mercurio (1972) in educational rituals; McEwan and Tuck (1973) in the school/work transition; Campbell (1977) in school climate; Bates (1978) in general issues in the New Sociology of Education; and Ramsay (1979) in teacher socialisation. Several of these papers reflected or elaborated on work appearing in other forms. Vellekoop's (1970) work, for instance, was published by Canterbury University as *Vocational Choice in New Zealand.* Adams' work was part of a larger international project reported more fully in international journals such as the Symposium in *Comparative Education Review* (1970). Mercurio's work was published more fully as *Caning, Educational Rite and Tradition* (1972).

Outside the Journal a number of volumes were published such as Calvert's *Role of the Pupil* (1975), which, like the work of Biddle, Adams, Fraser et al., (1970) coincided with a collapse of interest in role theory as a productive perspective in the sociology of education. Somerset's *Littledene Revisited* (1974) was republished as a genuflection towards the past and simply reinforced the point that little of equal value was contemporarily available. Robinson and O'Rourke (1974) usefully pulled together a collection of source documents and were roundly castigated for contributing so little to the development of a sociological theory of New Zealand education (Braithwaite, 1974).

Clearly, by the mid-seventies some sociologists were looking for a sustained sociological analysis of New Zealand education, the time was ripe. The only problem was, who was to do it? Ramsay (1975) made a beginning. His volume, which was initially intended as a sociology of New Zealand education, foundered on the same rocks as Robinson and O'Rourke in that it eventually became a collection of individualised studies. Nonetheless, it was much more original than anything previously produced and fairly represented most of what was available in New Zealand in mid-decade. In keeping with the sociology of education in New Zealand at that time, the book was a somewhat myopic volume struggling to escape its entrapment in the form of institutional sociology mapped out previously by Musgrave (1965), a decade before. It concentrated on three related institutions; family, school and class. In hindsight, it seems curious that there was so little reflection of the impact of Young's *Knowledge and Control*, published four years earlier and, at that time, creating a storm of controversy in English sociology of education, nor of the revisionary materials emerging from the Open University. Indeed, the Introduction to this sociology of New Zealand education was hardly sociological at all, relying more on the work of Peters, O'Connor, Dearden and White, than on Bernstein, Bourdieu, Young, Whitty, Esland, Ahier, and the emerging proponents of the New Sociology of Education. In this respect, it is an accurate reflection of the state of New Zealand sociology of education in the middle of the seventies. Ramsay's book has been used for the second half of the decade as a text in most Schools of Education. It is the best we have. Unfortunately, it presents little intellectual challenge in thinking about education, and sits uncomfortably beside such texts as Young (1971), Bowles and Gintis (1976), Bernstein (1975), and Bourdieu and Passeron (1977), which are now creeping into advanced courses.

Part of the problem is of course that an adequate sociology of New Zealand education needs to be based upon a wider literature - both analytic and research based - than is currently available.

Why the Dearth of Research and Analysis?

If the frequency and content of publication and review leads us to believe that interest in, and debate over issues in the sociology of education is at a fairly low level, we are entitled to ask what those two dozen or so sociologists have been doing for the past decade. There are several answers to this question. Firstly, they have been teaching. The small numbers of sociologists in universities has meant that very few individuals have been carrying responsibility for unreasonably large numbers of students. Over the span of a decade, Braithwaite, Ramsay, Barrington and Calvert have been carrying almost sole responsibility for teaching courses, from Introductory to Advanced, in their respective institutions. Canterbury has until recently lacked a convincing program in the sociology of education, Massey alone has had a number of sociologists (on and off), but the variety of courses offered and the heavy and increasing demands of off campus teaching have prevented a great deal of attention being paid to research and publication. Secondly, and cynically, several of the sociologists have been preoccupied with the need to complete their own Ph.Ds. There is an apparent paradox here, for it could reasonably be expected that such research oriented activity would produce a substantial body of useful literature. That it has not done so is in part due to the absence of senior academics familiar with the contemporary revolutions in sociological thought occurring in Europe and North America, and also to the absence of any real argument over the implications of these debates for the New Zealand situation.

In my mind, it is this lack of theoretical debate, the curious (and unnecessary) isolation of New Zealand from an extensive and public debate in Europe and the United States, which is the primary cause of the weakness of sociology of education in New Zealand. This debate is complex and extensive and its subtle ramifications could probably not be examined in toto in New Zealand. However, the questions being raised about education as a means of social control (Young), of cultural reproduction (Bourdieu), of capitalist hegemony (Bowles and Gintis), of technical production (Apple) are major social as well as educational issues, which speak directly to the current condition of New Zealand. The ways in which such questions penetrate into educational systems, schools and classrooms, are important in New Zealand as elsewhere. They demand researchers' attention. Until such attention is given to the theoretical structure of the issues and problems, then little meaningful research is possible.

There has, of course, been some research which has not seen the light of day. In 1969/1970, Bates and Adams undertook, in cooperation with a number of students throughout New Zealand, a study of teacher role on a matched, though haphazard, sample of pupils, parents and teachers. Unfortunately for the chief researchers, the data collection was inconsistent, the problems of training and control over distance too great, and the computer capacity available at that time too small to accommodate the analyses required. A number of small studies resulted from a project in the form of M.A. and Diploma in Education theses (see Pickens, 1975, 1976a, 1976b), but the grand design of the project withered. The fate of the Role Set Project is instructive in that the scale of research which was demanded by the researchers, was not adequately supported in terms of either personnel, finance or facilities. Research on anything other than a small scale seems difficult to mount in New Zealand. Similar, thought not insoluble problems seem to beset the School Effects Project, also based at Massey.

The problem lies less in the accumulation of data than in the sustained attention needed to provide adequate analysis. This is a continuing story in New Zealand research. For instance, data banks are available for Watson's cohort analysis of 1958 teacher training entrants. Little analysis has been undertaken. Similarly, the Role Set data are still available. The data resulting from the 1970 IEA study are available on tape to researchers, as is the huge mass of data resulting from the department's Baseline Survey. As any of the custodians of these materials will admit, their existence is as much of an embarrassment as an achievement, for there is in practical terms no-one available to work on them.

This situation is the result of several interacting factors. Firstly, there is the previously noted preoccupation of academics with teaching. Secondly, partly as a result of the lack of research (or theoretical) traditions in the sociology of education, there is only a tiny number of M.A. and Ph.D students currently receiving training. Thirdly, there is no adequate career path for research graduates either in universities or in the Department of Education (which unlike the Department of Scientific and Industrial Research is apparently unable to appoint research graduates on any scale other than clerical, unless they are members of the Inspectorate). Compared, say, with the situation for psychologists, neither opportunity nor incentive exists for talented undergraduates to undertake graduate studies in the sociology of education. Fourthly, and perhaps most disappointing, there is the failure of organisations such as the New Zealand Council for Educational Research to develop a sufficient sociological imagination to sponsor or conduct studies comparable, for instance, with Halsey's study of education, occupation and mobility, or to develop a tradition flowing from, for instance, Leicester Webb's *Control of Education in New Zealand* (1937).

New Directions

There are growing indications, however, of interest in a new range of problems articulated by the new sociology of education. Clark (1979) has, for instance, produced one of the most coherent analyses of Young's work yet available. Bates (1978) has attempted to outline some of the major issues involved and indicate how they might be tackled in New Zealand (1979). Wilson (1979) has begun an analysis of the relation between a segmented workforce and a segmenting education system. Shuker (1979) has begun a re-interpretation of New Zealand's educational history in the light of emerging sociological issues. Freeman-Moir (1979) and Davies and Freeman-Moir (1979) have begun an analysis of New Zealand education from a perspective of a radical, political economy. This is all very encouraging from a theoretical point of view and may well presage a new era in the sociology of education in New Zealand.

So What About Research?

Asking the right (or simply interesting) questions does not of itself produce research results which might substantiate or deny hypothesised conclusions. Certainly, much of the radical critique of education contained in the new wave exponents approach is a matter of re-interpretation of data and relations from an alternative ideological point of view. In this sense, much publicly available data can form a basis for research activity. There is, however, a limit to what can be achieved using conventional resources. Much of the analysis required by the new sociology cannot be conducted on the basis simply of official statistics (and even if it might, the Department of Education's discontinuing of the educational statistics volumes would make this difficult).

What is needed is research of a different kind that will fill out and illuminate the quantitative analysis which provides the framework for explanation and discussion. We could do with work of an ethnographic and phenomenological kind, such as that provided in the work of Paul Willis (1977), and being developed in the United States by, for instance, Lou Smith (1979). We could also do with some attempt to relate such accounts to macro-structures within the wider society, although preferably more sophisticated than that provided by Sharp and Green (1975). Such attempts would need to embrace an alternative definition of class, for instance, seeing it as a set of relations rather than simply as a categorisation of individuals' aggregated statistically on the basis of income, education and prestige. Again, the relationship between institutions of school and work needs examination, not simply in terms of the vocational aspirations of adolescents, but also as an account of *how* these aspirations are formed, and confirmed or confronted within the context of local cultures which give meaning to such aspirations. Yet again, the impact of technological innovation on the structure and meaning of work as a dual labour market develops under the pressure of deskilling has profound implications for the functions of education, and demands sociological analyses of the confrontation and articulation of ideologies in the political context of educational administration.

There are individuals in New Zealand interested in each of these areas. Mostly they are young scholars, mostly they are in universities, mostly they are concerned with the development of a critical social theory concerned with educational processes as part of the general processes of cultural reproduction in the context of political economy.

Problems and Possibilities

The critical nature of the theory being developed by younger academics, and the revisionist historical perspectives associated with it, are in the best traditions of independent intellectual and academic thought. They ask fundamental questions about a number of long-held and cherished beliefs about education, equality and justice. The search for more adequate answers to what now appear to be problems and solutions too easily taken for granted in the past, offers exciting challenges of an intellectual, moral and political kind.

However, it seems likely that the research needed to sustain and validate the new hypotheses is going to be difficult to do in New Zealand. Firstly, the universities have very limited funds available for educational research. Secondly, the lack of sufficient numbers of researchers makes the burden on individuals very heavy. Thirdly, the refusal of the University Grants Council Research Committee to fund personnel rather than equipment makes social science research difficult to fund from that source. Fourthly, the heavy teaching demands on sociologists of education prevent any sustained involvement in research.

My own judgement is that the universities are, nonetheless, the only places in which such research is likely to be done. This is because of several factors. Firstly, the theory on which significant new developments in research is likely to be based is a *critical* social theory. This makes it difficult for the Department of Education or the New Zealand Council for Educational Research (both of whom are politically vulnerable institutions) to sponsor, let alone conduct such research. Secondly, universities may be short of appropriate staff and students, but they nonetheless have virtually a monopoly on what talent there is. Moreover, personnel in universities can be sustained intellectually by an international community less susceptible to local pressures.

There are, of course, a number of researchers more interested in descriptive research related to issues identified as problematic by official sources. The perennial issue is, of course, that of Maori education. Because research into Maori education has been for so long a politically necessary involvement for government, department, the New Zealand Council for Educational Research and universities alike, the bulk of 'sociological' research has been confined to studies of Maori, or more often Maori/European comparisons. Much of such research has been claimed as sociological on the basis that race is a sociological category. The preoccupation of researchers with research into Maori issues has, however, been a prime cause of the failure to attend to fundamental issues of class, class formation, and educational and occupational segmentation and cultural reproduction in New Zealand society as a whole.

That is not to say that research into such issues in the sociology of education is unnecessary, only that an undue emphasis may well prevent the emergence of research of a more fundamental kind which would allow a sense of balance and a perspective within which ethnic issues can be understood as they are affected by other social, economic, cultural and educational processes. Wilson (1979) indicates precisely the ways in which the correspondence between Maori education and employment might be better appreciated within the context of a 'better understanding of the development of the capitalist production process' (1979: 24). His comment on previous researches which 'as a general rule... report in meticulous detail the passing of important events (but) leave out any comprehensive explanation of the social and economic forces which influence them' is a fair characterisation of the traditions of sociology in education in New Zealand. Moreover, his call for 'an expanded qualitative understanding' within the general structural framework of quantitative research should also be heeded.

Maybe we can take some small hope from a number of projects currently on the drawing boards. The first is a study of schools with special needs proposed by Waikato which involves both attempts at qualitative and quantitative analysis, and an attempt to situate the research within a structural study of transitional urban communities. The second is a study of school climate proposed by Massey, which attempts an integration of analyses of classroom, school and community, based on ideas of the importance of schooling as a focus for cultural reproduction in a provincial community. Third, at Canterbury John Freeman-Moir is about to embark upon an ethnographic study of the school/work transition, patterned to some extent on Willis's example. Fourth, Viviane Robinson at Auckland has begun a small scale study of the impact of vocational guidance procedures on clients. Fifthly, Roy Nash at Massey is developing a sociological account of the development and struggle over rural education in New Zealand. At Waikato, Battersby and Ramsay continue their studies of teacher education and socialisation.

Two things, however, are crucial to the success of these projects. Firstly, commitment on the part of the universities concerned to the provision of resources to sustain the research teams involved both in terms of the retention of key researchers through promotion and a reduction of teaching duties, and in terms of giving priority to the development of graduate research facilities in these areas, and secondly, commitment on the part of the funding agencies of sufficient funds to sustain the research effort over more than a brief time span. Neither of these commitments is easy to achieve. These are essential, however, if the sociology of education is to be allowed to make anything like its potential contribution to the analysis of education and society in New Zealand.

Future Prospects

Though I have argued that the tradition of sociology of education in New Zealand is undeveloped, that the community of scholars is scattered and divided, that too little effort has gone into the development of graduate research or occupational opportunities, that even the strongest groups of scholars in universities are unstable and poorly supported, I nonetheless believe that there is sufficient talent in the younger generation of scholars in New Zealand for a significant contribution to be made to the development of a sociology of New Zealand education. What is needed is a commitment on the part of universities to sponsor and promote this talent in order to retain it; a commitment on the part of sociologists to talk and, if possible, work with each other to develop a community of scholarship; a degree of political insulation to allow the development of a critical social theory, which will speak directly, though possibly controversially, to current issues, and a sufficient and continuous basis of financial support to allow more than brief attention to be paid to pressing problems. I believe these things are achievable even within the current context of New Zealand society. I believe that without them, certain crucial perspectives, analyses and documentations will be absent from a growing social, political and ideological debate over the function of education in a capitalist state during a major crisis. New Zealand would be the poorer for such an absence.

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Far from the Ivory Tower: A Review of Research on Women and Education in New Zealand

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Men are people, women are women. This view can certainly be inferred by looking at research on women and girls and education in New Zealand. For instance, in a bibliography, an article entitled *Education and vocational aspirations of New Zealand adolescent girls...* was followed by another entitled *Self evaluation and realism of vocational aspirations.* The latter was a study on fifth form boys.

If it is true that women in education in New Zealand are often accorded minority group status within an education system in which males occupy the vast majority of high status positions, it is hardly surprising that research on women and education tends to be done mainly by women themselves, and in particular, by women committed to change. In this review it will be suggested that research on women and education in New Zealand is not the preserve of detached, neuter, ivory tower academics, remote from the real world, and interested in knowledge for its own sake. Rather, research has been stimulated and undertaken away from the laboratory by women with convictions who are frequently striving to prove a point and to work for change. For instance, Bunkle, Levine and Wainwright (1976) introduce a collection of essays and research studies on women with the following comment:

A paper presented at *Research in Education in New Zealand: A Balance Sheet*, First National Conference of the New Zealand Association for Research in Education (NZARE), Victoria University of Wellington, 7-10 December, 1979.

> Most of us do not believe in 'knowledge for its own sake'. By publishing these essays we seek to use our understanding for a social purpose, to add our voices to the feminist movement... These essays are not neutral. A conscious effort has been made to describe sexism 'the way I see it', not according to an abstract academic formula which takes the guts out of the experience.

Some would even go so far as to reject the traditional models of research as 'internalising a male academic perspective' (Levine, 1974, p. 81).

Thus, research tends to be intertwined with ideology, commitment and action. Material on women in New Zealand is often hard to locate (Bunkle, 1976, and Dell, 1978). Findings are frequently handed round in unpublished papers or reported at various gatherings, rather than published in academic journals or reported to academic conferences. Material is gathered to substantiate submissions, rather than to test a theory, and much of the research is small-scale, and local, rather than national or definitive. All of these factors make an academic-type review of the research a difficult proposition. However an attempt will be made, first by describing available sources and looking at the quantity of research done, then by briefly looking at influences on research on women and education, and finally by reviewing some of the research results and indicating some gaps in the research thus far.

Sources of Research Surveyed

In carrying out this survey, education was defined very broadly to include both formal and informal education and socialization. However, the review was limited to studies directly focused on education and thus omitted such topics as child care, politics, employment, and the status and role of women, although all of these do of course have implications for the education of women and girls.

It was also decided to focus on published material. This unfortunately rules out a considerable amount of research, but it is possibly a more realistic indication of the material readily available at the moment.

No bibliographies specifically related to women and education in New Zealand were available in Dunedin although others have found bibliographies such as those prepared by students of the New Zealand Library School and the New Zealand Council for Educational Research helpful.

Fortunately, thesis studies relevant to women and education are covered in various publications. Roth's *Bibliography of New Zealand Education* (1964) covers the period up to 1961, while Pickens (1975, 1976 and 1979) lists more recent studies. An analysis of thesis titles shows a marked increase in research on women and education since the mid sixties (see Table 1). Indeed, only two theses on women or girls were found in Roth's index under *Women* or *Girls* and no separate section on women was included in the text. A further search of the entire list revealed several further theses possibly relevant to the topic which are included in the table. But overall very few theses were undertaken on women and education in the first 50 years of this century.

Table 1: Theses on Education and Women or Girls in New Zealand 1930 - 1970s

1930 - 1934	1	1955 - 1959	4
1935 - 1939	-	1960 - 1964	5
1940 - 1944	-	1965 - 1969	11
1945 - 1949	2	1970 - 1974	16
1950 - 1954	-	1975 +	13

While the lists may not be complete and the classification subjective, the trend is clear.

It is difficult to carry out a similar analysis of published research since a considerable proportion of published material is comment and opinion rather than research, and titles do not necessarily indicate whether or not an article is describing research activity. However, the same pattern is evident with a big increase in published material since the late sixties.

The two major bibliographic sources used to locate material published since 1961 give a very different impression of the amount of research undertaken. The *Index to New Zealand Periodicals* has a heading for *Women and Education* only for the years 1968 and 1976, and although references are included under other headings, the overall number is relatively small. Similarly, an analysis of the contents of the *New Zealand Journal of Educational Studies* since its beginning in 1966 reveals only seven articles focused on women or girls, and two of these are only indirectly relevant to education. In contrast, Seymour's bibliographies on Women's Studies in New Zealand (1978 and 1979) covering the period since 1974 have a large number of entries. For instance, 21 entries are listed under Education in 1978, although this number is much smaller than the number for some other topic such as abortion on which there were 35 entries in 1978. Seymour's bibliographies include student papers and other unpublished material, as well as a wide variety of material published outside the usual academic channels. Furthermore, much of the material is comment rather than research reporting, so it is not surprising that different impressions are gained from the two bibliographic sources.

It appears that much of the research undertaken on women and education is not published in academic journals. Possibly, this reflects a desire to reach a wider audience in an endeavour to influence public opinion and practice. However, one consequence is that interesting research results are sometimes published without a full presentation of the data and design details necessary for informed evaluation.

Similarly there seems to be a desire to make the proceedings of conferences widely available. For instance, the report on the important conference on *Education and the Equality of the Sexes* has been widely distributed. Unfortunately the report is in summary form and does not include actual papers presented at the conference, many of which were valuable contributions, frequently referred to in the literature. It is pleasing to note that papers from the Womens' Studies Association Conference in Hamilton last year have been published in full.

Possibly there is a trend towards more publication of research on women and education. If so, this should greatly help researchers in the area. Certainly there is an increasing trend towards the publication of non-thesis student studies through such outlets as *Delta* and the *Psychological Research Series* from Waikato University. While uneven in quality and often necessarily restricted in scope, sampling and control procedures, these studies are adding to the fund of research findings, suggesting new avenues for research, and demonstrating considerable research interest in women and education.

It is difficult to document, but it appears that most of the research on this topic is being done by women. Where authors' Christian names are given (as in Seymour's bibliographies), these seem to be predominantly female. Several of the articles in the *New Zealand Journal of Educational Studies* have been contributed by males, but the total number of articles in the journal is so small that it would be unwise to generalise from this. In addition, there are far more male than female lecturers in university Departments of Education from which many articles for this journal are obtained. (Only about 10 percent of the permanent staff of Education Departments in 1979 were female.)

Overall, a review of research on women and education in New Zealand suggests that since the mid sixties there has been an increasing research interest shown in this topic, especially among women, and that reports of some of the research are available. Forms of publication are diverse and often intended for the general public rather than an academic audience, but there is a fairly rapidly increasing body of previous research available to those interested in the topic.

Influences on Research

In most areas of research, it would be appropriate to examine major landmark studies and theoretical developments which have provided the stimulus for research. But in research on women and education in New Zealand, it seems to me that the stimulus has often come from outside academia, and indeed from outside the Education establishment - from the women's movement, from conferences, from International Women's Year, from the rapidly multiplying women's studies courses, and from the Society for Research on Women in New Zealand.

The Women's Movement

It is surely not coincidental that the rise of the women's movement in New Zealand has coincided with the increase in research on women and education, and that some of the same people are involved in both. Certainly the United Women's Conventions have provided a great personal stimulus to a large number of women in this country. (For a report of one such recent convention, see *Changes, Chances, Choices*, Brown *et al.* 1977.) In addition, the movement has been dubbed 'the university without walls' which is, however, 'not initiated by or confined to academic ordering or academic values' (Seymour, 1978, p. xxii). According to Tough (1974), the movement has reached more people and achieved more changes in both men and women than any other educative organization in the last ten years. A careful analysis of the influences of the Women's Movement in New Zealand on both research and education, could well prove very worthwhile.

International Women's Year

Although widely criticised by radical feminists and others (see Ray, 1975), IWY did have the effect in New Zealand of stirring officialdom to some modest courses of action, including the convening of the conference on *Education and the Equality of the Sexes*. In preparation for this conference, 26 projects were undertaken, some details of which are available in the report (Department of Education, 1976). Although the studies were mainly limited in scope, they provided clear evidence on issues such as sex-role stereotyping in curriculum materials and educational environments, and the absence of women from higher levels of the educational establishment in New Zealand. Unfortunately, as has been noted, the report of the conference does not include the actual papers presented, most of which were highly relevant to the topic of this review. However, the format of the conference was designed to achieve more than just talk, and through the studies beforehand, the stimulus to the 100 invited participants and the report prepared in a format suitable for widespread distribution, this conference seemed to me a landmark in the development of research on women and girls in education in New Zealand. It no doubt also served as a consciousness-raising exercise for those in the education system who had assumed that we already enjoyed complete equality between the sexes in education in New Zealand, and thus that research on this topic was unnecessary or even discriminatory.

IWY also resulted in a great deal of writing about women, and both the journal *Education* (No. 9, 1975) and the *New Zealand Post Primary Teachers' Association Journal* (April and May, 1975) devoted considerable attention to the topic of women and education, particularly to the place of women in the teaching profession.

It has been suggested that 'IWY was yet another plot engineered by men to make us all so heartily sick of the subject that come December 31 we'd be clamouring for the word *woman* to be erased from the English language forever' (Wright, 1975, p.2). However, both in the volume of research generated and a raising of the level of awareness about problems of women and education, it seems that IWY made a positive contribution to research on women and education in New Zealand.

Society for Research on Women in New Zealand (SROW)

This unique organization was formed in May, 1966, at which time it was claimed that 'little other than the most basic facts of births, marriages, deaths, medical and unemployment statistics are recorded about women' (SROW, 1968). Its prime aim was to undertake research on the education of girls and women, their subsequent employment, and in general, on the needs of girls and women in New Zealand. Findings were to be publicised and efforts made to bring about desirable changes. Since 1966, the list of studies undertaken by groups within this society has been impressive, and many of the studies have been published. Surprisingly, in view of the aims, very little of the research has focused directly on education, more attention being given to employment, the family, and general needs of women. However, many of the studies have relevance to education, and the studies on women on school committees (SROW, 1977 (b)) and women in further education (SROW, 1977 (a)) are particularly relevant in this review. In addition, the society has acted as a training ground for research in the social sciences, and skills have been developed among a wider group of people than typically involved in such research. However, the society's work has not been without its critics such as Levine (1974) who maintains that it conforms to the rigorous technical guidelines laid down by the (male) academic and political structures. Results are fed to policy makers and social researchers, two male-dominated groups. And furthermore, interviewers are typically 'trained to find information rather than to open up a therapeutic situation involving encounter and personal growth' (p. 80).

Interestingly, these comments were included in an academic journal article. The society itself is undergoing a continuing debate about the most appropriate ways of publishing findings and their role in bringing about change in society (Levett and Shields, 1975). Whatever the direction in the future, SROW has been responsible for a great deal of useful research in the last ten years and even Levine maintains that 'their experience is a remarkable instance of highly motivated training in survey techniques organized and channelled into a self-directed programme of empirical research' (p. 79). A somewhat similar kind of research was also undertaken by a much older organization, the National Council of Women, which dates back to 1896. They carried out a national survey in 1973 focused on employment-related issues concerning women, which included some data on attitudes to education. The introduction to the report *What Price Equality?* (1974) maintains that their research 'is not the work of experts. It is rather a cooperative effort by the ordinary members of NCW with expert help' (p. 7). This help came from several university departments, but the impetus and main body of the work was done by Society members, and once again we see useful research being undertaken by a group describing themselves as concerned amateurs.

Women's Studies Courses

The first Women's Studies Association conference was held in Hamilton last year (1978) and has resulted in the publication of the conference papers (Seymour, 1978 (a)). While many of the papers are more relevant to the content of women's studies courses than to research on women and education, it seems probable that the increasing interest in women's studies has already stimulated more research on women. Benseman (1978) reports that 46 courses of women's studies run by 35 organizations have been offered and that 82 percent of these have been established since 1975 (IWY). Some of the courses are run *for* women, such as assertiveness training, but there are also increasing numbers of courses *about* women, seeking to redress the male bias seen in the selection and interpretation of curriculum material in many traditional academic disciplines. Some such courses have recently been introduced in university and other formal settings, and are available for credit towards various qualifications.

(This distinction is important since it seems that the few male participants in such courses were almost all involved in this kind of formal course.) Twenty of the 21 contributors to the conference and all but two of the organizers of courses on women's studies were female, so it would appear that this organization is still predominantly female at present.

Taken together, it seems that research on women and education in New Zealand has been greatly influenced by groups of concerned women. Some female academics such as Bunkle, McDonald, Malcolm, Ritchie, Seymour and Robinson have been involved in the process, but their work has often been a personal statement, not necessarily automatically attracting institutional recognition or support (e.g., Jones, 1978). Furthermore, enquiries made earlier this year to University Departments of Education revealed little evidence of current research on women and education. Thus it would appear that, as has been claimed by Seymour (1978, p. xxii) about women's studies, much of the impetus for research on women and education has come from outside the ivory towers.

Research Topics and Results

The aim of this section is to provide a brief review of published research on women and education in New Zealand and to suggest some areas in which there are still gaps. The review is not intended to be completely comprehensive, rather the aim is to select research typical of that so far carried out. It should be also noted that several important references were found to have disappeared from the University of Otago library and thus could not be included in this review.

Child Rearing

A good summary of research on parental influences on sex roles can be found in Smith (in press). Overall, the Ritchies' further analysis of their 1970 data (Ritchie and Ritchie, 1977) is the major available resource, although little detailed data has so far been presented to support the conclusions drawn. A number of interesting student studies have been undertaken, but these are generally small-scale and unpublished. Thus there is need for further research in this area, preferably based on direct observation of mothers', fathers' and children's behaviour rather than relying entirely on mothers' reports. Considerable overseas research is available, but it is by no means certain that findings would have cross-cultural applicability. Studies such as those of Barney (1975), Bell (1975), and Macaskill (1976), have shown clearly that sex-role stereotyping has occurred in New Zealand children by the time they get to preschool, but more information is needed on the processes involved in this development.

Analysis of Children's Books

Compelling evidence of stereotyping of sex roles in children's books in New Zealand is freely available. For instance, the Dunedin Collective for Women's study: *First Sex, Second Sex* (1973) provides a collection of examples from infant readers. This was followed by *Run John Run: Look Janet Look*, by the Council for Equal Pay and Opportunity (1976) which provides a more empirical analysis including checks of interrater reliability. Both studies show that infant readers have more stories and pictures of boys, and that far more boys are shown in the hero role. Parents are very stereotyped and women are portrayed in a very narrow range of roles (less than a third of those of the men). Girls are frequently shown as timid, good, reproachful, having few definite interests, and taking few initiatives. Boys on the other hand are more often lively, adventurous, and mischievous. Although some of the findings are less dramatic than overseas studies, and *Run John Run* lists some books which the authors felt deserved praise for both text and pictures, there is clear evidence of both subtle and not-so-subtle sex-role stereotyping running through the early readers. And some very sexist examples are still around. Gullen (1978) analysed the Little Golden Books which showed similar results to the other studies, and quotes with horror a poem from *Aren't you Glad:*

> Little girls have soft hair
> and necklaces and lace,
> daintiness and dolls
> and sweetness in their face.
>
> Little boys are rougher
> with bikes and balls and blocks.
> Little boys are tougher
> with corduroys and socks.

One student paper (Taylor) abstracted in Seymour (1978) suggests that reading material used in secondary schools may also seldom portray a girl or women as the main character. And Allum (1977) has found evidence of bias in home economics texts, while Bell (1975) examined the songs in junior song books. All the available research gives clear evidence of some sex-role stereotyping in curriculum materials, but so far the majority of attention has been given to infant readers, and it seems desirable that a wider selection of material used in schools be analysed.

Media

Two student studies (Hooker, 1976, and Ingram, 1976) have found strong stereotyping of sex roles in television advertisements and women's magazines, and it would be expected that other studies of the media would produce similar findings, but as yet, little attention has been given to this source of sex-typing modelling.

Coeducation

Irving (1976) has summarized research on coeducation but concluded that 'it is extremely difficult to draw wholly reliable conclusions about which type of school is better'. It seems probable that the choice of single-sex or coeducational schools (where such a choice is available) and the experience of education in the two settings, may well be different for males and females (e.g., Wales, 1978, and Young, 1978) but further careful study would be needed to establish this point. In addition, while important differences between the two kinds of school population have not been ruled out, it would be very difficult to attribute any differences found between such schools to the processes of education involved, rather than to differences in the subject groups. Again, it seems questionable whether overseas research on this topic (mainly from England) would necessarily be valid in the New Zealand context.

Subject choice

Sex differences in subject choices of secondary school pupils, even within coeducational schools, have been clearly documented (Bunce, 1970, and the National Advisory Council on the Employment of Women, 1968). Girls more often chose languages, social sciences and biology, while boys more often took mathematics and the physical sciences. Since these studies, the pattern has changed a little with fewer pupils of either sex taking languages and a lot more girls taking mathematics. However, differences remain with implications for occupational choice and further education. My own study suggested that sex differences in subject choice cannot simply be attributed to differences in ability or interest since boys and girls agreed closely about which subjects were interesting, easy and important. Nor had the majority of pupils chosen a career at the time that subject choices were made. However, beliefs about the importance of careers for males seemed to underlie some male choices of subjects seen as difficult or uninteresting, but possibly important for careers. Interestingly, girls' choices of subjects varied greatly between schools. For example, in one school, 22 percent of sixth form girls took mathematics, while in another, the proportion was 62 percent. Clearly further research is needed to examine the effect of school policies and traditions on the subject choice of girls.

Not surprisingly, similar differences in subject choice are also evident in tertiary education. Romanovsky (1975) found a similar pattern of subject choice and also demonstrated that women students select from among a much more restricted group of subjects than men. No female students were found in 1970 in 62 of the 155 major subject groups.

Interesting differences in the proportions of women in different subject areas categorized as 'masculine', 'feminine', 'androgynous', and 'undifferentiated' (on the Bem test) were obtained in a student study (Adlai and O'Brien, 1978) at Waikato. Further research in this area would probably support some of the sex-role explanations of sex differences in subject choice. Ritchie, Villiger and Duignan (1977) have produced a sex role inventory for New Zealand children which they believe will be a useful tool in this kind of research.

Achievement

Some information on sex differences in abilities among New Zealand school children is outlined by Smith (in press). Norms from PAT tests suggest girls tend to be superior in reading and mathematics in the early years, but that by Form 1 any differences have disappeared. Interestingly, she comments that the superiority of girls over boys in learning to read is reversed in countries such as Germany and Nigeria where primary teachers are male. This could be a profitable line of enquiry in New Zealand. An unpublished study by Clark (1975) investigated attitudes of Form 2 children towards mathematics and found similarly positive attitudes for both sexes.

It is very difficult to examine sex differences in achievement at higher levels in secondary school or university since as a number of studies (e.g., Romanovsky, 1975) show, from the sixth form on through university, girls form a diminishing proportion of those remaining in formal education. In 1971, only 31 percent of university students were female. Overall, there is no New Zealand evidence of sex differences in academic achievement which could explain differences in subject or consequent occupational choice.

Little research has been done on the 'fear-of-success' motive so widely reported among girls and women in the United States. However, one student study (Yeoman, 1977) suggests that although such a motive was evident among her small sample of fifth form and university students, it apparently affected only about half as many females in New Zealand as has been found in America. More evidence on this point would be very interesting.

Vocational guidance

Predictably, the small amount of research done in this area shows a great deal of sex-role stereotyping. For example, Ranstead (1977) found sexist language and illustrations typical of State Services Commission leaflets, although some of these are being modified. But little is known of what actually goes on in school vocational guidance programmes, or individual counselling in schools and in the Vocational Guidance Service. Possibly the recent introduction of expanded guidance networks and trained school counsellors is producing a rather different approach to vocational guidance than the somewhat passive approach employed and frequently criticised in the past (e.g., Robinson and Aitken, 1975).

Women in the teaching profession

A considerable amount of research, mainly descriptive, has been done recently on the position of women in teaching. Bunkle (1975), Malcolm (1978), Mayo (1970), Webster (1975) have clearly demonstrated that women are dramatically under-represented in higher-level positions in teaching, and that the position may have worsened rather than improved since earlier this century. It has been frequently noted that proportionately, slightly more women than men attend holiday in-service courses at their own expense, while women are grossly underrepresented at term-time invited courses. Course planners are almost entirely male, as are high-level Education Department officials, school principals, and those holding positions of responsibility, with the diminishing exception of women teachers in girls' schools. This underrepresentation of women in high places affects not only women in the teaching profession, but also girls in the schools who are not exposed to models of women in positions of power.

Similarly, a striking graph prepared by Wright for the *Education and the Equality of the Sexes* conference (Department of Education, 1975, p. 10) shows that women occupy very few positions of responsibility in teachers colleges in spite of the predominance of female students in these institutions. And Lodge's analysis (1976) of women academics in New Zealand universities shows a similar pattern. Women were found on the average to have comparable qualifications, more publications and more administrative experience than their male counterparts, and yet they took longer on average to receive promotion. Such findings are supported by evidence from the Inter-University Committee for Sex Equality in Education (Thompson, 1974).

Malcolm (1978) attempts to provide some evidence about the reasons underlying the absence of women in higher positions in teaching Case studies and questionnaire results indicated that the most influential reason was the priority given by women to marriage and family which meant an almost universal break in service. Other factors included women's preference for teaching rather than administration and women's lack of self-esteem leading to fewer applications for promotion. Further investigation into the processes involved in promotion would seem to be worthwhile, and it is pleasing to learn that the Department of Education is currently carrying out such a research project in collaboration with the teachers' associations (McDonald, in press).

As well as examining the status of women in teaching, a few studies have been undertaken into female membership of decision-making bodies in education. The SROW survey of men and women on school committees (1977) is described by Julian (1978) who was involved in the study. It was found that only one in five members of school committees were women, and that this proportion was even lower in rural areas. Half the women surveyed said they would not consider being chairman, even if they had held similar offices in other (more female) organizations. Sex-role stereotypes were clearly evident among committee members who frequently justified the inclusion of women on school committees by referring to teamaking and helping with social functions, but felt that there should not be too many women since they are not interested in business. Nor, according to one correspondent, are they any good at chopping down gorse bushes!

McDonald (1975) has examined the role of women in decision-making bodies in education in an unpublished paper entitled *Let Us Now Praise Famous Men*. She suggests that there is a principle of appointing approximately two women onto advisory committees, regardless of the size of the committee. Currently some moves are underway to increase the influence of women in educational decision-making, but clearly continuing monitoring of the process is required.

Two more general studies into the characteristics of married women teachers have been undertaken. Watson (1966) presented statistics on the marriage of women teachers and the occupations of their husbands, but his findings would probably now be a little outdated, and his conclusions somewhat controversial. For instance:

> Most women enter the occupational world only as a short adventure between school and marriage, or else as a means of supplementing the family income... As many headmasters know, the woman teacher who is interested mainly in her home and marriage is not likely to have a strong interest in raising professional standards or in improving her teaching skill. Indeed, such women are sometimes

> opposed to raising teaching standards since this may run contrary to their personal long term interests. (pp. 159-160).

These suggestions are refuted by a study by McDonald (1976) in which readers of *Education* who were married women teachers were invited to respond to some questions. These women reported deriving considerable personal satisfaction from teaching, and while the salary was welcome, the satisfaction was primary. In addition, many were seeking professional careers and some mentioned as a problem their difficulty in getting (male) inspectors and principals to accept that they were serious about their careers. While these results are very interesting, the respondents in this survey were volunteers who took the initiative in participating and they were disproportionately from the primary sector, so the findings may not necessarily be representative of all married women teachers.

Intervention studies

Somewhat surprisingly, only one published study was found in which there was an attempt to reduce sex role stereotyping. Kelderman, Potts, Wade and Gudsell (1978) in a small-scale student study, obtained information on attitudes to sex roles etc., from sixth form boys and girls, prior to a brief presentation including talk, discussion, song, and drama, designed to change attitudes in this area. Significant changes were obtained on 11 of the 29 attitudinal statements on a retest a week later. Larger scale, controlled, intervention studies could well prove very worthwhile.

Historical research

Among published historical research on women and education in New Zealand are a number of studies of girls' schools (e.g., Cumming and Cumming, 1971). In addition, there have been historical analyses of available statistics relating to women and education. Gardner (1976) describes the early women graduates in New Zealand and shows that the proportion of women in higher education has not increased since the early part of this century. Similarly Romanovsky (1975) and Bunkle (1975b) examine trends in the statistics. All these studies suggest a decline in the relative position of women, rather than the improvement which is commonly believed to have occurred. Overall, considering the innovations in the education of women in earlier years in New Zealand, there is comparatively little historical research published on this topic so far.

Conclusion

It appears that a considerable amount of descriptive data on girls and women in education in New Zealand is now available. For instance it is clear that even very young New Zealand children share the attitudes to sex roles found among adults in our society. Many books for young children, including those used for teaching reading, are shown to be stereotyped. The effects of single-sex education and coeducation in secondary schools are not clear, but there are clear sex differences in subject choice in both kinds of school and at university, even though differences in achievement are not found. Fewer girls than boys stay on at school past the fifth form or progress to higher education. Although many women teachers claim to be interested in a career, women are underrepresented in higher places within the teaching profession and on educational decision-making bodies.

But there are also gaps in the research thus far. Possibly due to the particular interests and abilities of those carrying out the research, more attention has been given to young children and women teachers, than to older children or women in higher education. Factors associated with sex roles, in particular, marriage and child rearing, are believed to underlie many of the findings, but comparatively few studies have attempted to examine process variables. Research has tended to be descriptive, with analyses of available statistics and surveys by far the most popular approach.

Thus it is suggested that the following lines of further research might prove particularly fruitful:

1. Observational studies of students and teachers at all levels of education.
2. Investigations of the powerful 'hidden curriculum', of attitudes, models, rules and traditions found in our schools.
3. Experiments to assess the effectiveness of procedures and curriculum materials (such as those being produced by the

Curriculum Unit in the Department of Education) designed to widen the horizon of boys and girls beyond traditional sex roles.

4. Studies of men and boys in education. Our present models of education are claimed to be designed by men for males, but such claims need verification. Also, it is often necessary to look at sex role data of both sexes together since the two are interrelated.

5. Replication of overseas studies such as those on fear of success.

6. Research on women and further education and the more informal kinds of adult education in which so many women are involved.

7. Research on women in tertiary education. The relative lack of research here is surprising in view of the widespread use of university students as subjects in so much psychological and other research.

A good start has been made in researching women and education in New Zealand, but much interesting work remains to be done.

Conclusion

It has been argued in this paper that much of the stimulus for research on women and education in New Zealand has come from the grass roots level from 'women with a cause'. Descriptive evidence was necessary to back up submissions and claims for changes in society (although some feminists rejected altogether the value of objective research in pursuing their aims). It seems to me that there is a major and continuing role for groups of women and individuals operating far from traditional research environments in monitoring media materials, carrying out case studies and surveys, raising questions and challenging the complacent or defensive attitudes still frequently found in many parts of the male-dominated educational establishment towards issues involved with women and education. However, I have suggested that there is also a need for moving from documentation and description to analysis, explanation, and experimentation with action. Such kinds of study need all the research skill available. While such skill is by no means limited to the academic world, I believe that academics (including males) could contribute much more to research on women and education than has so far been the case. It also seems to me that there would be considerable value in involving more men in this research, partly as a consciousness-raising exercise, and partly because there are still relatively few women to be found in academia - even in Departments of Education!

Once upon a time, an aim of education was to prepare boys and girls for their future sex roles. More recently, we seem to be looking for ways to educate people to overcome their sex roles. In my more optimistic moments, I look forward to a time when sex becomes a less important society classification and research variable. Then maybe research in education could be focused on dimensions of individual differences which are surely more basic to most educational processes than that of sex.

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Commentary

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Jenny Bunce's paper[1] located the contemporary enthusiasm for studies of women and education in the feminist movement of the 1960s and 70s. One could infer from her analysis that this has been a mutually reinforcing process, for not only has the growth of feminism sparked interest in studies of women's education, but the feeding back of that information to the feminist movement itself has had an important educative function for the participants. What stands out from any review of this topic is thus the political flavour deeply embeddedin its discussions.

Secondly, not only has the growing body of research on women and education been conducted by women with a political and action commitment, but also by women with few resources. As a result of this, perhaps, studies have been small-scale and one-off; often rather superficial analyses of sex-role stereotyping in student behaviour, textbooks or subject choice. Clearly, the detailed studies, using a more sophisticated range of methods, which Bunce identifies as the way ahead for research on women and education will require more resources.

While we have studied women students, little attention so far has been given to women as education professionals. Judy Whitcombe's paper[2] was in many ways the beginning of a response to Bunce's calls for studies of women teachers. Judy reported to us from the second phase (in-depth interviews) of a two-year project, initiated by the Committee on Women and Education, which she is conducting within the Department of Education to investigate why women don't achieve proportional representation in senior positions. The superficial answer to this question has always been that women don't want and therefore don't apply for promotion, but a few examples of the findings from Judy's study show that the situation is much more complex than this. Fewer eligible women than men apply for promotion, but those who do apply have a higher success rate. While men apply on a virtual market-place basis, and seemed surprised when Judy asked them if they'd received encouragement from anyone to apply, women on the other hand almost always mentioned encouragement before their decision to apply. Another argument advanced for women's under-representation has been the hampering of women's careers by family commitments. While Judy's study certainly supports this assumption, that argument is complicated by the discovered phenomenon of the 'male milestone' - the mortgage repayments. One is reminded of Bunce's call for studies of male sex role restrictions to be made.

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[1] Bunce, J. *Far from the Ivory Tower. A Review of Research on Women and Education in New Zealand.*

[2] Whitcombe, J. *Career and Promotion Patterns of Women Primary and Secondary Teachers in New Zealand.*

While it is true that Judy's study will go a long way further into this complex area of women's education than any previous research in New Zealand, there will still be many unanswered questions at the end of her project - questions related, for instance, to the extent of women's fear of success; the origins and nature of support for their promotional aspirations and the way this intersects with their own personality and social situation; women's reaction to the hierarchical nature of the teaching service; and the effects of policy decisions and economic forces on women's teaching careers.

Any investigations of these questions in the future will take us into the arena of social psychology on the one hand and political economy on the other, with the associated need for sophisticated methodologies. They will also require many more resources than women have so far had access to. A very tempting response to this problem of resources, given the urgency of obtaining the information, is to advocate that men with higher status and therefore more resources at their command be encouraged to undertake the research. Unfortunately, men and women tend to approach similar problems from quite different perspectives. Thus any work done by men on women's education may well be quite erroneous for it may not ask the questions that need to be asked in the way they should be asked. So one concludes that the next task for women researchers is to win the resources they need to carry on their work.

The History of New Zealand Education

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In this paper I intend to review the place of history of education in university courses in New Zealand, to describe in general terms the current state of research in New Zealand educational history, to set the latter in the context of overseas trends, and finally to draw some tentative conclusions with an eye to the future. I do not aim to provide a detailed comparative coverage of the various courses in New Zealand universities which are taught under the title of New Zealand History of Education or some similar label. Nor do I intend to list and classify researches which have been completed in the history of education within say the last fifteen years. This kind of information is readily found by consulting the Union List of Theses, Roth's Bibliography (although this needs to be updated) and professional journals. Practitioners of the art will be aware that many kinds of interest and enthusiasms can be encapsulated under the general label of 'History' and I hope I will be forgiven for also deciding not to chase and categorise all individual researches thus described. I wish to confine my critique to the general 'state of the art'.

There was a time when 'History of Education' (sometimes it was linked with other material and called 'Theory') formed the staple diet of foundations courses for all university students studying Education. This followed the precedent established in nineteenth-century Britain where

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history was required to carry a major part of the content and also provide for the expected behavioural outcomes of the study of Education itself. Thus in his inaugural lecture in 1876 for the newly-established Chair of Education at the University of Edinburgh, S. Laurie argued:

> The process of historical evolution will furnish a continual illustration of the Philosophy of Education, and while guarding us against the errors of other times, recall to us great ideas which we are apt to push rudely aside with the vulgar self-assurance that distinguishes a mechanical age oblivious of the debts it owes to the past, and ignoring its moral inheritance.
>
> (1901, p.39)

Needless to say, all of this now has a quaintly dated air although the general role of history as a means of initiating students into the study of Education is deserving of further comment. What has happened over the years is not that the importance and value of history has declined. It is rather that as the study of Education has become more specialised, history has had to compete with psychology, sociology, philosophy, and other academic specialisms for a place on the student menu. More recently still in this country, all academic studies in Education Departments have had to rise to the further challenge of the much increased demand for professionally-oriented courses which in an earlier era would have been categorised unambiguously as 'training'. In this latter context history has not fared especially well as a broad preparation for professional training. Young people who are anxious to be kitted-out with applied skills often find the problematic emphasis of scholarship to be either disappointing or frustrating or both. History also appears in the minds of many to be burdened with the problems and quarrels of yesteryear; not an attractive prospect for persons whose sights are fixed firmly upon future-regarding utility.

Yet the fact of the matter is that history of education has always possessed some major advantages as a foundational study as well as being a subject that can provide for a sequence of courses which lead up to research experience. I make no apology for claiming that the narrative component in history is a real strength in foundational teaching. While it is true, of course, that narrative per se does not constitute scholarly teaching and learning, a built-in temporal sequence is a valuable aid to instructional strategies with beginning students. Educational psychology shares this advantage in child-development courses but I suspect that teachers in some other foundational areas (e.g., philosophy of education, sociology of education) have to work much harder to gain the same ground. Most students initially find that history is not too difficult. There is a minimal use of technical vocabulary, familiar school learning experience and knowledge is used, and new information is introduced. In summary, there are good practical reasons, as well as more important academic justifications, for supporting the maintenance of history of education as a foundational study in Education Departments.

This will only be the case, however, if history genuinely serves to throw light upon the study of Education itself. Students need, in fact, to be placed in no doubt that history of education as a mode of academic inquiry is intimately concerned with the problematic enterprise of Education. And if this is to be done effectively the role of research becomes crucial. What is required is a literature which is adequate and ongoing, which highlights worthwhile issues and which adds to the store of educationists' insights. That is why I have commenced this paper by talking about the teaching of the subject. The point is that in the final analysis the teaching will be only as strong as the research literature with which it is underpinned. Accordingly, when we talk about the 'state of the art' in terms of research we are substantively talking about the state of the discipline (teaching and research) as a whole.

Comprehensive publications concerned with New Zealand educational history remain few and far between. In some respects the pioneering work of A.G. Butchers has not yet been surpassed and we must therefore continue to expect to find old shibboleths being laid to rest by new research. What is significant to note is the time that it apparently takes for old legends to die. McGeorge, Breward and others have, for example, convincingly shown in published work that the traditional claim that the secular provisions of the 1877 Act were ingeniously undermined by the skill of a Nelson clergyman is false. But this belief, enshrined in Butchers' work, lingers on. This tells us something about the paucity of major literature in the 'state of the art'. Other landmarks in the literature include Leicester Webb's *Control of Education in New Zealand*, an elegantly advanced thesis but one that is light on substantial research, and A.E. Campbell's masterly *Educating New Zealand*. Of all the books that have served as texts in educational history I would still rate Campbell's as being the most judiciously written for students of Education. However, it is again the case that Campbell relied heavily upon Butchers' research and accordingly his writing could not be expected to break substantially new ground. In more recent years several useful texts have become available. Barrington and Beaglehole have opened up the field of Maori education and more importantly, their work is based upon updated research. Ian McLaren's *Education in a Small Democracy* is another good introductory text based upon the concept of topics rather than that of narrative through time. My own experience in using this book, however, has been that the absence of narrative is something of a drawback. Ian and Alan Cumming's major work *History of State Education in New Zealand 1840-1975* is yet to be tested in the marketplace. This book marks a return to narrative comprehensive history as a means of introducing students to the general field. It includes revised findings in the research literature and places developments more in keeping with their respective social settings than was the case in earlier comprehensive texts. What we can fairly conclude from this admittedly cursory review of the major literature, I think, is that things are moving but moving too slowly for comfort or complacency.

There are also in existence a number of texts upon more specialised topics. Most of these works, which can be categorised under the heading of history, are not now easily accessible but they constitute a valuable source for teachers and students. Nicol's work on the technical schools, Thom's work on the district high schools, and Watson's work on the intermediate schools are examples of what I have in mind. Their number is added to sporadically, the most recent example being Hugh Parton's study of the University of New Zealand. The book in this category to which I wish to draw particular attention, however, is John Ewing's *The Development of the New Zealand Primary School Curriculum 1877-1970*. This is not so much because of the book *per se* (although it is a fine piece of work in my view) but rather because of what it portends for future publishing ventures. What Ewing has done is to take a topic of central concern to teachers, administrators and critics and work through it in a narrative developmental manner *from the point of view* of those whose task it is to organise and appraise the work in the schools. It is this approach, I believe, which makes his book the most distinctive contribution to New Zealand educational history in recent years. Be it noted that it is a problem-posing approach. No sooner is one kind of solution tried than its weaknesses start to appear and a new problematic situation is in the making. In my opinion we urgently need more scholarship of this kind. And we need to take it in to such areas as teacher training, public examinations, and the provision and development of special education to name but three.

The body of research which has been completed in New Zealand universities in recent years is much more heartening than the state of the literature might indicate. If you go back to the years before 1950, for example, you will find very little research work in history of education that is of any worth at all. It seems clear that this says something to the credit of teachers of the art and it is noteworthy too that some of the best of this research is finding its way into professional journals here and overseas. This is always to be preferred to the fate of gathering dust in library stackrooms. It would be better still if more of the material found its way into published books. Some people in seeking out research findings make the mistake of concentrating only upon theses presented at an advanced level of qualification. But it is worth noting that some of the finest material is to be found in dissertations presented for diplomas. This comes about I think because many students are assisted to do well when they embark upon carefully restricted topics. On the other hand, all university teachers are painfully aware of what happens when major theses get out of control.

Over the years much energy has been put into reworking the ground pioneered by Butchers and others. This has been an immensely profitable exercise but I believe that it is now completed in large part, especially so for the years before the turn of the century. In *institutional* terms we have a pretty good grasp of our material. The question is then, what should be or what is likely to be our research thrust from here? Do we as historians move our tests to new ground (e.g., the last decade)? Or do we send students back over the old territory to see if they can find anything else? Or do we set ourselves new sorts of questions that nobody has asked before? I guess that we may do several or all of these things but before going on to speculate about future developments I want to indicate clearly why it is the case that historiography is never dead and that research endeavour is always in the most basic sense, revisionist.

The point is that we begin our historical research by looking *for* something, by determining what it *is* that is problematic. This construction which we place upon our material belongs to us; it is not something that resides in the facts independently of us. As E.H. Carr puts it, 'The belief in a hard core of historical facts existing objectively and independently of the historian is a preposterous fallacy...' (1964, p.12). Of course it is the case that we cannot simply choose to report facts that confirm our prior prejudice or to ignore concrete evidence that would otherwise lead us to modify our initial formulation of a problem. If we do we will correctly be accused of writing bad history. But this still leaves us with ample room to manoeuvre as we engage in changing emphases in historical research. Indeed, change we must because we write in the present time and not in some time past or some time future. Our concept of what is important or what is worth exploring is therefore very much determined by the kind of people we are, by the social climate in which we live, by the insights and interests we have gained from educationists generally, by the challenges confronting the educational enterprise, and above all by our estimation of the extent or otherwise to which past historical interpretations satisfy current questioning. Thus we cannot and should not expect historical research ever to be complete, or as some people say, to be 'definitive'. As W.H. Walsh concludes, 'It is not just a regrettable fact that... a student tends to read past happenings in terms of present-day experience; the truth is that he has to do so'. (1967, p.75)

What this means from the point of view of this paper is that there will always be room for 'reworking old ground' not simply to correct some earlier factual mistakes but rather to raise new or modified questions which now seem to be more valuable points to pursue. It may also mean that new material is sought out and appraised or that material which earlier received scant attention now becomes the object of close study. So the answer to my initial questions about the thrust of future research on New Zealand educational history is properly that research workers may well be pursuing all of these options. We can, however, advance some intelligent guesses about future developments, I think, by estimating why it is that the pioneering research of Butchers *et al.* no longer meets present needs, and by reviewing significant research trends overseas and noting their counterparts here in New Zealand.

If you look at the work of Butchers upon which so much of our history of education literature depends, you will find that it is primarily concerned with describing the political construction and legislative development of an education system that is 'free, secular and compulsory'. What it concentrates upon is a few heroes, a goodly number of villains, financial catastrophes and stagnant years offset by periods of dramatic development. What comes through is the prime point that despite difficulties New Zealand created a worthy and distinctive system of public education, an achievement worth defending against the misguided zeal of 'state-aid' parties, the gradgrinds of this world, and the supineness of the indifferent. This is not to suggest that Butchers' scholarship was fundamentally flawed, it is rather to make the obvious point that *this* was the perspective which attracted a researcher writing in the 1930's as he saw his world, a world too which provided 'rise and triumph' educational histories in many countries. But here are but a few of the many points which Butchers' work does not raise adequately. What about the effect of education upon significant minority groups? What were the problems facing those who designed the curricula and evaluation practices in the schools? How did these problems change over the years and how did significant groups (e.g., the teachers, employers) respond to these changes? How *did* the public really react to the rhetoric of equality of opportunity in education and how did teachers and administrators respond to that reaction? Over the years, how have teachers converted ideology into tasks that can be successfully completed with the resources at their command? What is it that causes education systems to grow and what role do pressure groups play in that growth? Is the Johnson Committee's concern to translate the moral imperative 'educate the whole child' into an anti-intellectual standpoint, an aberration in terms of our educational thinking and practice or is it consistent with an older tradition? If the Committee's recommendations *do* have roots in the past, what (if anything) is distinctive about them? What is the nature of the relationship between the changing compulsory school-age requirement and the country's changing labour laws, its views about childhood, its views about the role of work? A disparate list of questions indeed, but all of the above have this fact in common. They are questions which people ask with some urgency now, they are questions upon which historians can throw some light, and they are questions which scholars from earlier generations would not have framed in the way that we wish to frame them today. This is what revisionism is all about.

In the past decade three writers stand out as trend setters in international history of education research. They are Brian Simon, Paul Nash and Michael Katz. I do not intend to suggest that these three scholars are the only or even the best of our historians, but rather that significant trends can be associated with their published work. Simon, an English academic, has alerted us to the way that the development of mass education systems can affect significant minority cultures; in this case cohesively organised working class groups in nineteenth and early twentieth century Britain. By drawing upon material not previously used by historians of education he has been able to show convincingly how the growth of state schooling was not regarded in a neutral fashion by these groups, how enlightened alternatives to state-provided schools were pioneered by some of these groups, how various political attempts were made to steer state education developments closer to working class aspirations, and how working class families were often caught in the dilemma which fascinates Marxist historians of seeing the school used by their successful sons and daughters as a means of escaping from their class. In the light of this material Simon reviews many of the well-known landmarks of educational development in Britain, thus providing a new dimension to our understanding of the events which occurred and the policy options which were exercised by the schools.

Katz in his book *The Irony of Early School Reform* develops his theme by subjecting the participants in educational reform in mid-nineteenth century Massachusetts to close inspection from the point of view of their role in the power structure of the community. What he concludes is that under the rhetoric of beneficence those who were most concerned with school reform wished to use education to consolidate their own political power and to train up a workforce with domesticated attitudes and skills that were appropriate for capitalist industrialism. Many historians, for example, Ian Davey, are now busy applying Katz' perspective to populations with which they are familiar and which possess census data that allows them a fair chance to plot schooling careers. What is being sought here is clearer knowledge about how identifiable groups have used the schools (you can name your own group e.g., the education of girls) and the identifiable effect which this use has had upon school policies. It is an approach which requires a fair grasp of social theory, some familiarity with sociological constructs and a great deal of persistence assuming that you can find good stores of quantitative data.

To date, little of Simon's and Katz' approaches has seeped into New Zealand research. It is not difficult to find examples of educational administrators and politicians 'gentling the masses' but our relatively undifferentiated and small-town economy has simply not thrown up the coherent nonconformity that Simon has been able to mine. Nor indeed are New Zealand historians blessed with the access to good data that is the lot of some of their more fortunate colleagues in other parts of the world. Nevertheless I think that we are likely to see a steady development of work in these fields in the next few years. The questions raised are the ones that many people feel are worth asking and once the quest has begun I am confident that we will find more than we might now suspect. For example, did you know that the state schools in New Zealand were the subject of one of the first instances of organised working class industrial action in this country when a boycott was placed on the purchase of school texts from a prominent printing firm which refused to negotiate with the newly-formed Printers' Union? Did you know that the boycott was successful and that furthermore it led directly to the Department of Education deciding to enter the text publishing field itself? You won't find any reference to these things in Butchers *et al.*, but it is all part of our educational history.

The most interesting work which we have on these lines right now is that which has been completed by Rollo Arnold (1973). Arnold believes that we cannot make much sense of why our system of education developed in the way that it did, of how people viewed education and educational opportunity, unless we understand a lot more about the environment from which the settlers came and the kinds of communities which they established in New Zealand. In one sense it seems to me that what Arnold has done is to carry out extended research projects elaborating upon the theme of the opening chapter of Campbell's *Educating New Zealand*, but in another and more important sense, he shows through exhaustive statistical analysis the likely effect of traumatic events in the English village upon the settlers' views of schooling. What research can unravel from generalised assertion is what is so important about Arnold's work. I doubt whether Arnold's research will take him as far on as he would like to go in explaining events simply because people's ideas are themselves moulded by the environment within which they live, and rhetoric apart, these ideas will be modified over time. For example Arnold (1975) wishes to explain the opening up of the New Zealand secondary schools to a wider public after 1900 by reference to events which had occurred in rural England thirty or more years previously. I don't think that this will do at all as a sufficient explanation but I don't think that current explanations for this important development will suffice either. We need to study a lot more about what was happening in the primary schools and the secondary schools of the time. We need to know more about what was happening in the economy, what was taking place with respect to work entry policies, and what was taking place in other parts of the world (especially Britain). We must, of course, avoid attributing secondary school development to the genius of one man, George Hogben. The real question in this example is why the time was right for an able administrator to make the moves that he did and I am not satisfied that Arnold's social history takes us yet sufficiently far along that particular path. But the major point is that we can hope that much more is to come. The questions raised, most certainly seem to be worth their asking.

The important argument highlighted in Paul Nash's book *History and Education* is that research in history of education should be concerned to keep abreast of current issues of interest to educationists in general and not simply to educational historians. Included in his book, for example, is a research article (by Simon, in fact) of streaming practices in British schools from 1860-1960. This is no 'rise and triumph' explanation. Rather it is the story of the working out of particular practices at a particular time, which practices subsequently fall into disfavour for social or pedagogical reasons and are thus modified. Apart from Ewing's work, earlier mentioned, we are desperately short of this kind of research in New Zealand education. The result is that we fall into that awful stage one university trap of proclaiming with certitude that our new practices are perfect and that the problematic nature of our enterprise is banished for ever. I am confident that as long as the study of Education itself remains in a healthy state there will be ample possibilities and need for people to pursue valuable research upon what I suppose some would want to call the historical development of 'professional' topics.

And so it is that in a paper of the 'state of the art' in historical research I return finally to the question of teaching the subject. For reasons which I hope will now be clear, I believe that it is absolutely imperative that history of education be taught in a problematic fashion and I conclude that this can only be done if the teachers of educational history are themselves fully part of a university department of education where they are in touch with and contributing to general developments. The great disaster would be to become lost in some in-house fog pursuing one's own hobbies and complaining that no-one wanted to listen to one's discoveries. In that kind of scenario the chances sadly would be that the discoveries weren't worth the effort and that the teaching would also attest to that fact.

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HONESTY IS THE BEST POLICY.

Commentary

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The six papers[1] presented raised topics that have been given an edge to over recent years. I'd like to refer briefly to three of these topics and to mention an additional matter.

The first was raised by David McKenzie in his lead paper. He said: '... research endeavour is always in the most basic sense revisionist;' and he went on to develop this theme very cogently, pointing out that we should not expect historical research ever to be complete or 'definitive'. Roy Shuker in a paper entitled *A Revisionist Perspective?* took up this point and moved it a step further by asking on what principles should revision research be undertaken. He contrasted the liberal-progressive view accepted in the past by researchers in New Zealand educational history, including myself, with a revisionist perspective which asks such questions as: 'Did schools act as agents of social control in New Zealand?' 'If they did, how was such influence exercised?' I believe these two points of view, if not taken to extremes, could to a fair extent be reconciled through discussion. There are, however, some implications in Shuker's thesis about the relationship of the state's schools and the community on which agreement could be difficult; and the possibility of alternative perspectives must of course be recognised.

The second topic emphasised the effects on research of the broadening of resources available. There are three reasons for improved sources: the gradual reorganisation of official archives which has brought to light much material previously hidden; the patient work of Rollo Arnold, Jim

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[1] McKenzie, D. *The History of New Zealand Education;* Dakin, J.C. *The Social and Educational Background of the Earliest British Emigrants;* Bridgeman, N. *Taranaki. Its Teachers and Education System, 1870-1890;* Arnold, R.D. *Using the School Dispute to Explore the Social Content of Schooling: A Case Study;* Shuker, R. *New Zealand's Educational History. A Revisionist Perspective?* and Nash, R. *Secondary Education in Rural New Zealand 1877-1979.*

Dakin and others who have unearthed rich data on the social and educational background and occupations of early immigrants to New Zealand and hence on colonial schooling; and the use of oral history, diaries, school logbooks and the like in building up a picture of our educational past. Some archival disasters in the past have blocked research, but ways can now be found of getting round them. For researchers the educational perspective is deeper and broader, and re-assessments or revisions can be made with more confidence. Though we have a much better historical perspective today than A.G. Butchers had when he wrote *Education in New Zealand* published in 1930, I still feel much admiration for his work and acknowledge my debt to it. He ploughed the first furrow, using such resources as were available to him, organised his material and wrote it up. It was an achievement that to my mind shouldn't be dimmed by re-assessments.

The third topic was introduced in some form or other in nearly every paper and was a kind of continuing theme. It was the desire for a closer intermeshing of educational history with the social context of the times. Roy Nash in a review of secondary education in rural New Zealand, for example, urged further study of the educational needs of rural communities. Rollo Arnold in a case study showed how reports of a dispute between a school committee and the Marlborough Education Board in 1896 which ended up in the Supreme Court opened a window on the strong social influences at work. I believe the stage is now set for wider social content in historical research. A comprehensive social history of New Zealand would, of course, be a great help to educational historians.

My last comment is about gaps in our educational history, that is, gaps awaiting researchers. David McKenzie listed some of them in his paper. Teacher-training in New Zealand, for example, has never been looked at in complete perspective from provincial days to the present. Yet there are dramatic changes envisaged in a report published during 1979. A full history of the training of teachers in New Zealand is well justified. The American philosopher, George Santayana, argued that 'those who cannot remember the past are condemned to repeat it'. New Zealand's educational history has more than once borne witness to the truth of this statement. I refer also to a large area of our education system, one heavy with social elements, that so far as I am aware has never been touched by independent research. This is the area best known as child welfare which grew out of the industrial schools established in provincial times. For some ninety years it was part of the education system and a few years ago came under the wing of the Social Welfare Department. I am in no doubt that historical research into New Zealand education has plenty of room to work in.

Research on Educational Measurement and Testing in New Zealand

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To provide a coherent, comprehensive and approximately truthful account of research activity on educational measurement and testing in this country over the past 30 years is by no means easy, especially as so little appears to have been recorded for posterity. Tracking down the elusive facts I have found to be a major obstacle. I do not have all of them by any means so that the picture of research I project may have blank spots; it may be distorted because of my particular viewpoint, and possibly out of focus too, depending on your own interpretation of what should be highlighted.

I have begun by limiting the topic to educational measurement and testing. I want to further define the field by making a distinction between research which simply uses tests and other forms of measurement (which would embrace much educational research of an empirical nature) and research which addresses problems of educational measurement, by developing, modifying or adapting tests and measures, evaluating appropriate uses of measurement techniques (both old and new) or illuminating aspects of the administration and interpretation of tests. Hence, to take two recent pieces of research, I would not consider the survey, *Educational Standards in State Schools* (Department of Education, 1978) within the ambit of my definition whereas the development of more appropriate measures of mathematical competence in the Canterbury-Westland scheme (Kay, 1978) is included. Administering a questionnaire,

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A paper presented at *Research in Education in New Zealand : A Balance Sheet*, First National Conference of the New Zealand Association for Research in Education (NZARE), Victoria University of Wellington, 7-10 December 1979.

rating scales and achievement tests devised by somebody else and using a sampling design, administration procedures, and data analyses provided by some other institution as in the IEA studies (the current Mathematics study excepted) is not, in my book, New Zealand research on educational measurement and testing (Phillipps, 1976). But taking the *Otis Tests of Mental Ability* and checking on the gradient of item difficulties for a sample of intermediate school pupils quite definitely is (Arvidson, 1974). I trust my distinction is clear because I have applied it rigorously in analysing the few reports and lists of research studies available in this country.

In preparing this review I have used the institutional setting of the research in an endeavour to provide a suitable framework. While this approach works tolerably well, there are limitations and inevitable overlaps with collaborative and interdisciplinary research. No attempt is made to provide detail of studies; the prime objective has been to present a broad perspective.

Historical Overview*

Despite their isolation and remoteness from the centres of test development and research, educators in New Zealand were experimenting with various kinds of tests and measures, notably those of Binet, Ballard and Terman, during the early part of this century. The name of Norman McKenzie is associated with this pioneer work. In 1921 McKenzie went to Canada for training in research and test development. Later, as senior inspector for Taranaki Province, he conducted surveys in 1927 and again in 1929 using such measures as the *Haggerty Reading Examination* and *Test of Educable Capacity, Ayre's Scales* and the *Courtis General Test*; tests which he revised for use in New Zealand. The published findings of these Taranaki school surveys, released in 1930, may be regarded as this country's first research monograph. Concurrently, D.G. Ball, Inspector of Native Schools, employed McKenzie's 1929 test battery with 1000 Maori pupils in 92 native schools and reported his findings in the *New Zealand Gazette*, December, 1930.

In this same decade the universities took the initiative, introducing the country to new ways of assessing or diagnosing aptitude and achievement. Although it is difficult to tease out the educational from the more clinically oriented work, men such as Hunter, Gould and Shelley (N.Z.'s first professor of education) were experimenting with tests like those from the *NIIP* and the *Army Beta* in a variety of settings: schools, prisons and industry. Shelley, at Canterbury, established a clinic in 1923, with one of its functions being to undertake educational and vocational testing of children and he appointed a young man fresh from teachers' college, C.E. Beeby, as his assistant. Beeby later became the University's first director of educational and psychological laboratories.

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* This section draws heavily on *Fifty Years of Test Supply - The New Zealand Experience*, (Watson, 1979), a paper presented at the 50th Jubilee Conference, New Zealand Psychological Society, Massey University.

Another name from that era is that of Winifred Valentine, who, after two years abroad studying the mentally retarded, took up an appointment in 1925 to assess children for special classes throughout New Zealand. She worked mainly with the Binet but also with other achievement and performance measures.

Contemporaneously, a number of New Zealand schools, such as Kowhai Junior High School in Auckland, had developed relatively elaborate testing programmes using measures like the *Akarana Test*, the *Pomare Group Test of Intelligence*, both home-grown tests, and other aptitude and achievement tests for guidance and classification purposes.

Extensive studies were also being undertaken in the mid-20s by the Department of Education in preparing the *Terman Intelligence Tests* for use in New Zealand.

The first test to be standardized for use in New Zealand appears to have been Ria MacAlister's *One Minute Reading Test* for children aged 6-11; the work being undertaken in 1928 or 1929.

Into the 1930s and the New Zealand Council for Educational Research became involved in research on educational measurement and testing with the standardization of two measures of intelligence: the well-known *Otis Self-Administering Tests of Mental Ability* and an *ACER Non-verbal Test*. It is interesting to note that the New Zealand standardizations were planned to be conducted simultaneously with comparable standardizations across the Tasman (McIntyre, 1938; Redmond and Davies, 1940). Regrettably, NZCER's plans for comprehensive test development and validation programmes were disrupted by war and the energies of its small staff were directed elsewhere.

Six months before the war ended, NZCER sponsored a national conference devoted exclusively to questions of testing; the first and only conference of its kind to date. The report of the conference and the developments which followed confirm that this meeting was a key event providing guidelines for New Zealand educators and researchers for the following 20 years.

It is interesting to note also, the calibre of the university personnel teaching at this time in the field of educational psychology, tests and measurement - Winterbourn, Parkyn, Tizard, Betty Bernadelli, Beaglehole and others who went on to distinguished academic careers.

During the 1940s a group of graduate students at the University of Auckland, under the leadership of Professor A.B. Fitt, assembled data in a series of theses to modify the *Stanford-Binet Scale* (Form L) for New Zealand (Fitt, 1952). Their work was supplemented by related research projects at Canterbury under Ralph Winterbourn and at Victoria under Colin Bailey and Arthur Fieldhouse. This exercise represents one of the few examples of collaboration among universities in reviewing the suitability of a widely-used test (NZCER, 1948).

Fieldhouse, at Victoria University, also began work in 1946 to adapt a number of achievement measures for use in New Zealand schools. After appraising the reading tests of Burt, Ballard and Schonell he opted instead to prepare the *Oral Word Reading Test* (Fieldhouse, 1952). Under NZCER's sponsorship, Fieldhouse continued his work into the fifties and standardized the ACER reading battery : *Work Knowledge, Speed of Reading* and *Reading for Meaning* (NZCER, 1956) and the *ACER : Arithmetic Test - Form C* (NZCER, 1956). These tests, incidentally, were not adapted in any way but were straightforward standardization exercises.

Apart from E.W. Seville's development of a series of diagnostic arithmetic tests, which proved very popular with teachers, the work in the area of educational measurement and testing continued to be almost exclusively concerned with the adaptation and/or norming of overseas tests for New Zealand conditions. In the early 1950s, for example, Cyril Rogers, with assistance from students engaged on theses for the University of Auckland, set out to standardize Thurstone's *Primary Mental Abilities Test* on a sample of 11 to 17-year-olds in the province of Auckland (Rogers, 1956); Dick Seddon at Otago University prepared Otago norms for the *Schonell Diagnostic Arithmetic Tests* in 1952; and Peter Freyberg assembled norms for a Manawatu sample for Schonell's *Silent Reading Test A* in 1957.

In the early sixties the Commission on Education (Currie Commission) made a number of recommendations which had a profound impact on work in the testing field. Most notably the Commission recommended the development of standardized tests of attainment in the basic subjects to be administered at regular intervals during a child's school career. (These 'checkpoint' proposals were subsequently modified; see *Education*, October, 1963). As events transpired, the Government formally requested in 1965 that NZCER set up a separate division to undertake the task. The work of this division is discussed below.

University Research - Staff

One could reasonably expect that investigations in the area of educational measurement and testing might be conducted by university staff involved with the teaching of educational measurement courses or the training of students in the administration and interpretation of tests. A search of the university calendars and departmental annual reports from 1970 on, reveals that this is indeed the case, but that the output is somewhat meagre. Staff of our various universities, so far as one can tell from the titles of articles and the type of journal which publishes this kind of research, together averaged fewer than two articles per year and, as far as can be ascertained, in some years nothing at all in the area of tests and measurement was published by a New Zealand university staff member. Only ten or so people have published research during the 9-year period surveyed and three lecturers from three different universities have been responsible for the majority of the publications. The diversity of research completed by university staff is illustrated by the following examples of published findings: *An Objective Method of Defining the Region of the Pass/Fail Cutting Point in University Examinations* (Marsh, 1969), *Some Effects of Testing Procedure on Divergent Thinking* (Nicholls, 1971), *The WISC-R : A New Zealand Study of Norms and Validity* (Tuck, Hanson and Zimmerman, 1975), *The Stability of Scores and Difference Scores on the Progressive Achievement Tests of Listening and Reading Comprehension* (Hughes and Tuck, 1978).

With so few published studies over a wide range of topics within the broad field, it is obviously impossible to detect any trends;

aspects of the field of particular interest at a given point in time have been researched by an individual and in some cases the researcher has moved from one topic to another over the years; in others several studies explore one aspect, or it may be that one study spawns several articles.

But again, this reporting of available 'facts', largely publications, does not disclose the full extent of experimentation and research in this area. Undoubtedly, university staff have conducted small-scale studies on a wide variety of problems. These have never been published; very often they have not even been written up in report form, so that unless one happens to learn by way of personal communication of some kind in the course of one's own investigations, the scope and frequency of this kind of research is not disclosed.

Major test construction exercises have been conducted in recent years in at least two universities, Auckland and Canterbury. At Auckland, Marie Clay (Clay, 1972; Clay *et al.*, 1976) has produced two measures in the language area and Tony McNaughton (McNaughton, 1974) has been responsible for the development of a test of social studies.

Some years ago less successful efforts were made at Canterbury. The ill-fated *Canterbury Reasoning Test* and the *Tasman Tests* were developed and published (Shouksmith, 1960; 1964) but failed, for a variety of reasons, to capture a large test-user audience; Keeling and Seddon worked for some time on a test battery for Form III entrants (Keeling and Seddon, 1969) but the projected full battery has never been completed. Perhaps also worthy of mention is Jeanne Perry's abortive attempt to construct a performance test for Cook Islands children (NZCER, 1972).

Over 20 years ago, Gordon Arvidson (Arvidson, 1959) developed an entrance test known as the *General Ability Test* while on the staff of Victoria University, a measure which is still used with satisfaction by a number of secondary schools in the southern part of the North Island and elsewhere.

As an example of interdisciplinary research involving a sizeable educational measurement and testing component, Otago University's Dunedin Multidisciplinary Child Development Study is the obvious project upon which to focus. Phil Silva, Jennifer Bradshaw and others have developed several measures, most notably *The Dunedin Reading Test*, and investigated other tests such as the *Reynell Developmental Language Scale*, in the course of their longitudinal research of children 'at risk' (Silva, 1978; Bradshaw, 1978).

Presently, several New Zealand universities have small specialist units, and while each has a slightly different orientation, all have as one of their stated functions the improvement of teaching and assessment techniques of university staff. John Jones, Higher Education Research, Auckland University, John Clift, University Teaching and Research Centre at Victoria, Tuan Emery at the Educational Research and Advisory Unit, Canterbury University, and Terry Crooks, Higher Education Research Advisory Centre, Otago University, have all been involved in evaluation exercises which could legitimately be considered a form of research in the tests and measurement field. Publications for general consumption are not numerous, as yet, but it should be remembered that staff of these units have a rather special relationship with their clients which must be considered.

University Research - Students

Unpublished degree and diploma studies categorized under the heading of Tests and Testing in listings which have appeared irregularly in the *New Zealand Journal of Educational Studies* (Pickens, 1976; 1979) provide some indication of the popularity and interest in research in this area over the past 30 years.

Investigations under this heading conducted by students at university since 1950 number 74. However, in keeping with my definition of research into '*educational* measurement and testing', once the theses which are clearly 'psychological' (e.g., concerned with the measurement of personality via tests like the Rorschach, Rosenweig or 16 PF) are deleted, then the total number of student studies falls to something like 68. Of these, the majority are Diploma in Education studies (44); only two have been done by Diploma in Educational Psychology students. Twenty-one Masters studies have been completed: ten by Psychology students, ten by Education students and one by a student from a Department of Music! Some six theses on aspects of tests or testing have been presented at the University of Waikato for the B. Phil or M. Phil. degree. Only one study at doctoral level, that of Geoff Ord at Waikato, is listed under the heading Tests and Testing. Just one in 30 years! And it is questionable whether Dr Ord's work should be called New Zealand research.

Over the three decades the number of studies per decade has steadily increased from 20 in the 1950s to just over 30 during the 1970s. With increasing student numbers in Education departments this probably does not represent an increase in the popularity of aspects of testing as topics for theses, rather the reverse.

Interestingly, the majority of the studies in each decade have been conducted in the first five years with only a trickle of theses during the latter half. This was particularly so in the '50s and '70s.

It is tempting to speculate as to the reasons for the current paucity of student research in the area. Might it be reasonable to suggest that the contemporary disillusionment with certain kinds of testing and the many controversial issues surrounding the whole testing movement, particularly in the United States, might have something to do with the apparent lack of popularity? Only three theses have been completed since 1975 and presently only four studies are under way; two Dip. Eds., an M.Sc. in Psychology and an Education M.A. We can hardly argue that the topics for research in the field of educational measurement and testing are exhausted; rather it would appear that the 'climate' both within and without the universities is decidedly chilly towards testing at present.

Vague patterns emerge from analyses of what has been researched by students over the years 1950 to the present day. A cluster of ten Diploma studies, all done in the early '50s at the University of Auckland, are concerned with the standardization of Thurstone's *PMA*. These studies were all undertaken by students of Cyril Rogers and it appears that some kind of 'direction' was obviously operating at the time - or perhaps the students had caught the enthusiasm of their teacher?

Achievement testing has been the topic of a number of studies (approximately one-third) with mathematics a clear favourite. Somewhat surprisingly in a country obsessed with reading performance, only three studies over the whole time span have researched aspects of the measurement of reading skills; there have been more studies of music tests! Test construction or adaptation exercises are also fairly common, with standardization and validation studies rather less so.

None of the studies listed appear to investigate problems of educational measurement techniques. Indeed, no heading is provided for Educational Measurement in the *New Zealand Journal of Educational Studies* listings, nor is there any other descriptor under which such research might be categorized. It is reasonable to state then, that this aspect of research has been virtually ignored by students for the 30 years under review. Perhaps it reflects a distaste for things mathematical or statistical in the typical Education and Psychology student? Or maybe there are more complex reasons? It is also evident that the majority, perhaps 99 percent, of the research conducted has been in cognitive aspects of the field. Yet I feel certain that a great many theses include as assessment tools, checklists, questionnaires, rating scales and similar measures which have been especially devised or adapted from existing measures. I also suspect that most are not pretested and are of unknown reliability. Nonetheless, this activity with instruments of this kind represents an unidentified facet of the research in educational measurement and testing.

As with the analysis of publications of university staff, I strongly suspect that the indications of the scope and the frequency of research into aspects of educational measurement and testing are not accurately represented by the listings of theses. Unless the descriptors 'test(s)' or 'testing' are identified in the thesis title, it will be categorized elsewhere. My own Masters thesis provides an excellent example. Listed under 'creativity', the study was much more the development of a series of valid and reliable measures to investigate creative thinking and the use of factor analysis to attempt to identify underlying abilities and provide evidence of construct validity. There must be many theses misclassified similarly. What is obviously required is multiple classification using a variety of descriptors, or better still, some New Zealand publication like *Dissertation Abstracts*. This is not to denigrate Keith Pickens' very useful work. I am certain that he would agree with me that detail or elaboration is warranted to allow for greater accessibility and use of research published in thesis form.

Department of Education Research

The most obvious source of information on research undertaken by officers of the Department of Education in educational measurement and testing is the entries under Educational Development/Research Activities in the *Annual Reports* presented to Parliament by the Department each year. An analysis of these reports from 1970 to the present indicates that very little work has apparently been done in this area by Departmental officers. However, the reports of projects are abbreviated to the extent that it is difficult to ascertain whether the 'surveys', 'evaluations', 'pilot schemes', 'studies' and 'trials' actually contained a research component which could legitimately be termed 'educational measurement and testing'. There are tantalizing hints that experimentation and investigation have taken place; the difficulty is to identify the publication or report which may contain details. I have spent hours perusing Departmental publications such as the Curriculum Development Directorate bulletins and *Notes on Developments, Educational Development Conference* documents, Research and Statistics Division bulletins, School Certificate Examination Board reports, in-service course reports and the like. My best efforts have been frustrated; I have located few accounts of research that might fit my definition.

Since the early 1970s the Curriculum Development Directorate (formerly Unit) appears to have limited its activities in the field of testing and measurement to the construction and accompanying research of item banks, first in mathematics and more recently in science and foreign languages (Department of Education, 1978). There are indications that new assessment techniques for NESC English may also have been devised or investigated (Department of Education, 1976), but no reports of this projected research appear to have been published. Studies such as LARIC (Department of Education, 1978) and the Computation Survey (Department of Education, 1978), a longitudinal study, have elements of research into assessment methods and the development of measures specifically for the studies, but many of the evaluations of curriculum use established tests or non-test techniques.

The Department of Education's Examinations and Testing Unit, headed by Bruce Ramage, has, since the mid-70s, been actively developing and researching a reference test, known as the *Fifth Form Inter-school Moderating Test*, and to be used in moderating internally assessed School Certificate. A nationwide standardization of the measure has recently been completed and follow-up studies are in progress. A further moderating test for School Certificate Workshop Technology is being developed currently (Gavin, 1978; Ramage, 1979).

Another specialist group of Departmental officers in the IEA Unit has been extremely busy in preparing trial test materials, sampling designs and generally coordinating activity internationally for the massive second *IEA Mathematics Study*. Unlike previous IEA surveys, this study has a sizeable New Zealand input, and to my mind, particularly because of the research associated with the development of measures in both the cognitive and affective domains, meets the criteria for inclusion in the definition of educational measurement being employed (Department of Education, 1979).

Departmental officers have engaged increasingly in collaborative research with staff from other educational institutions and it is hoped that some of this research might involve experimentation and innovations in the educational measurement and testing field. For example, an account of the *Forms 1-4 Science : Learning in Science :* [*Related to Age/Developmental Levels*] (Waikato University), indicates that assessment instruments and procedures are to be developed together with resource materials (Department of Education, 1978).

It is also probable, of course, that some Departmental research would be of a confidential nature and that reports of such work would not be available. I have it on good authority that this is so. Presumably then, we might expect that some of the Department of Education's findings or enquiries into aspects of educational measurement and testing have not been released for general consumption. There is nothing sinister or unethical in this; my point is simply that some research may have been undertaken of which researchers outside the Department are uninformed.

Research by Teachers in the Schools

If research in educational measurement and testing has been undertaken by teachers in the school setting it would seem appropriate for the magazines of the two major teachers' organizations to report accounts of such research from time to time. Yet, an analysis of *National Education* over nearly twenty years (1960-1978) and the *New Zealand PPTA Journal* over the same period reveals an astonishing lack of reports of research of any kind, let alone in the particular area of interest to us.

Using even the broadest of definitions of 'research' I could find no more than four in *National Education,* three of them on spelling (Smith and Pearce, 1966; Bodkin and Duncan, 1966; Croft, 1976) and another on the *Pacific Infant Performance Scale* written by a university researcher (A. St. George, 1973). Another, albeit satirical article, *Intelligence and the Pakeha Child,* by Archer *et al.,* (1971) is research based and should probably be considered as fitting my definition.

Five accounts appeared in the *New Zealand PPTA Journal;* one written by an Otago University staff member (Boyd, 1969), another by a psychologist (Silva, 1971), two were contributed by the same researcher (McCaw, 1974; 1976) on the same subject, the Napier Internal Assessment Scheme, and the other, an analysis of a multiple-choice test; a brief study that came about almost accidentally (Spence, 1966). On the other hand, there are numerous articles of a descriptive nature or pieces expressing opinions about examinations, tests, evaluation, assessment schemes, testing and the like; thousands of words written about the pros and cons of various kinds of testing or examining, in some cases quoting (and sometimes misquoting!) overseas research studies - but precious little in the way of accounts of New Zealand research on aspects of educational measurement and testing.

I understand that the Department of Education's magazine, *Education* maintained a policy which enabled accounts of research, particularly applied research conducted by teachers, to be published. Indeed, the current volumes have a special section towards the back of each number entitled 'Exchange', which seems to be admirably suited for just this purpose. A survey of articles and reports published in *Education* over the past decade which provide information, or accounts of research on topics of educational measurement or testing reveals that only two would fit the definition of research I am employing, both written by university staff members (McNaughton, 1974; Hughes, 1977). One other piece on the setting up of the Mathematics item banks contributed by an anonymous member of the Curriculum Development Unit might just warrant inclusion (1971).

Another line of enquiry into what research has been undertaken in this area leads to the publications: *Innovations, Experiments and Projects in Primary Education 1971* and *Innovations, Experiments and Projects in Schools and Colleges, 1974*, which are based on the reports received annually from the DSIs. But again, the entries/accounts/reports are few. One, possibly two, of some 95 entries in 1971 would fit my definition of research and of the six in the 1974 list of 92 entries, five are contributed by Curriculum Development Division personnel and one by a teachers' college lecturer - none by teachers.

However, as the introduction to each of these publications points out '... the projects described here are ... only a selection of those conducted...' or words to that effect, so we cannot know precisely how many studies or projects might have been undertaken by practitioners in the school setting. Many of these informal school-based experiments or enquiries, I am certain, would fail to meet the stringent requirements of the professional or academic researcher. But, what we might call 'action research', grass-roots studies conducted to try to provide information that will help in making a decision about an immediate problem are undoubtedly done. Frequently, the findings will be confined to the particular school or at best to a group of local schools; they will seldom reach a wider audience, especially if there were no significant differences or the results were inconclusive, or, dare we say it, if they did not turn out in quite the way the researcher had hoped.

I thought originally that perhaps it was not that research is not being undertaken but that there was no vehicle, no way for teachers or others involved in the schools to have their studies and findings published. I am sure now that this is *not* the case; undoubtedly the outlets exist. Another possibility is that teachers are, for some reason, reluctant to use their professional magazines to publicize their work. But I cannot think why this would be so, unless, of course, they were submitting their articles to overseas journals, a course of action I believe to be unlikely.

From the published evidence available there would appear to be a dearth of teacher-conducted research. But the list of NZARE Personal Members gives at least four of the handful of teacher members as interested in the field of educational measurement and testing. I know personally that two of them have been actively engaged in investigating the suitability of tests of scholastic aptitude for the pupils in their school district and that written reports have been prepared (Forsyth, 1975). There are undoubtedly others. How do we find out about these people and what they have been doing?

Research in Teachers' Colleges

Staff of teachers' colleges have traditionally not been prolific contributors to the research in the area of tests and measurement. From my enquiries the names of only two researchers come to light: David Doake at Christchurch Teachers' College and his work on a standardized academic aptitude test for college students in the early '70s and Murray Hulbert at Hamilton for his recent developmental work on fifth and sixth form moderating tests. One would hope that more research has been done in our teachers' colleges, but again it is extraordinarily difficult to locate the information even when appropriate sources have been identified. Happily, I understand that Dunedin Teachers College is to act as a clearinghouse for all teacher's college research in the future.

Research In the Armed Services

The Services have long used measures of aptitude and achievement for selection purposes. Almost without exception the approaches and tests employed would have been inherited from the British, at least up until the Second World War, and the majority of these would be categorized as 'psychological' rather than 'educational'.

With the beginning of World War II, personnel research came of age because of the pressures of selection, most notably for aircrew, but also for other specialists in the Armed Forces. Methods and measures from overseas - Canada, the UK and USA, were employed to assess requisite aptitudes, temperament and other personality variables. Psychologists shouldered the bulk of the load and names like Wrigley, Hearnshaw and Waite are associated with the work of this time.

After the war, programmes of testing for selection purposes were further developed and validated with psychologists working with educationalists such as Harry McQueen and Jim Caughley during the late 1940s. From that time, with many ups and downs, administrative shuffles and re-shuffles within the Services, a strong, coordinated Defence Psychology Unit has emerged whose work embraces occupational and, to a lesser extent, educational fields. Much of the research of the people employed in this unit is oriented towards improved selection procedures in which tests and testing play a substantial role. Reports of development, validation and similar studies are naturally confidential so that we may not know the true extent of the research undertaken but I am given to understand that it is relatively extensive and sophisticated. (See Toulson and Williams, 1979, for a detailed history of the work of the New Zealand Armed Forces psychologists).

Research in Technical Institutes

Some difficulty was experienced in identifying staff of technical institutes who had contributed to research in the field under scrutiny. I managed to locate only two studies by tutors : an interesting article by Pat Bruce (1974) on test difficulty in the *New Zealand Journal of Educational Studies* and another in *Technical Education* by Monty Mead (1977) on an analysis of students' examination marks and internally assessed performance. Undoubtedly, these studies represent only the tip of the iceberg. But where do polytechnic people publish their findings?

Research by Other Agencies

Vocational Guidance Service

Through the fifties and sixties a large number of *Research and Testing Notes*, some 89 in all, were produced by an extremely energetic Research and Testing Officer, Jack Jennings. These notes covered a wide range of tests and occupations. Many of them provide norms for occupational samples, others report test results and include interpretative comments, whilst others are comparative studies. Despite their brevity, these notes represent a very useful account of small-scale, applied research in a specialized corner of the field of educational measurement and testing. Regrettably, when Jennings left the Service in 1969 the research activity declined abruptly. Lack of staff, vacant senior positions and the pressures for other kinds of work meant that only a handful of investigations were conducted over the next nine years.

In April 1978, the Vocational Guidance Service was transferred officially from the Department of Education to the Department of Labour and a new appointment to the position of Research and Testing Officer was made in May. That appointee was Joe Williams, a psychologist with vast experience. Already Mr Williams has initiated programmes which will lead to the provision of updated norms for several of the tests which are still used by officers of the Service in their day-to-day work although for many the emphasis has shifted away from testing for the present.

Psychological Service

One branch of the Department of Education vitally concerned with testing is the School Psychological Service. While much of the work of the school psychologists is of a clinical nature, the assessment of school achievement and the measurement of scholastic aptitude are also part and parcel of many case studies.

In the 1960s two major research programmes in the field of testing were undertaken. In 1963, Rogers tackled a New Zealand standardization of Raven's *Coloured Progressive Matrices* (Rogers, 1963) and the *Revised Tomlinson Junior School Test* was standardized nationally in 1964 (Callander *et al.* 1967). Currently, preparatory work is underway for another national standardization; this time of the *WISC-R*. Two other major enquiries in progress: one by Coleman on criterion-referenced assessment and another under the leadership of Eddy Eggers, at Palmerston North, on the *Burt Word Reading Test*.

Many small-scale studies on aspects of testing, predominantly investigations of the suitability of new tests for local conditions, are conducted by Psychological Service personnel. Examples of studies of this nature would be Peter du Chateau's work with the *Peabody Picture Vocabulary Test,* Craig Jackson's investigation of the *Aston Index,* R.W.K. Dawson's work with Thurstone's *PMA* in the Hutt Valley - Wellington region and the Christchurch Psychological Services' development of the *C-R Word Recognition Test.* In the main these studies are not funded centrally, or at all, and rely on the energy and enthusiasm of the individual psychologist for their conduct and completion. Findings would be known to local colleagues and may be disseminated more widely, depending on their perceived importance and impact. Again, it is difficult to specify just how numerous studies of this type are, but from my own personal knowledge some psychologists are quite actively involved in enquiries of this nature.

New Zealand Council for Educational Research

Since its inception in 1934 the Council has had an association with research in educational measurement and testing. In the early years this was largely through sponsorship or support of honorary research workers investigating aspects of the field and the publication of research monographs, e.g., *Standardizing Shorthand Tests* (James, 1944); *The Stanford-Binet Scale : its Suitability for New Zealand* (Fitt, 1952).

The exception to this pattern would be Redmond and Davies' standardization of the *Otis Self-Administering Tests of Mental Ability - Intermediate Form* and the *ACER : Non-verbal Test* and the anonymous standardization of *The Metropolitan Readiness Tests* in 1942 conducted by members of the Council's staff. Some adaptation of overseas' tests has also been undertaken by staff working on particular projects, e.g., the New Zealand revision of the *Minnesota Teacher Attitude Inventory* and several achievement tests of overseas' origin (Watson, 1958). Certainly, NZCER was the principal focus of the small amount of test development, as opposed to norming activity that had gone on. Explaining the lack of involvement in this sphere, Parkyn (NZCER, 1965), in a reiteration of Campbell's view of 20 years before, stated 'NZCER has been interested in tests mainly as an adjunct to its wider research activities. This is the main reason why it has avoided committing a large part of its slender resources to a more comprehensive development of educational or psychological tests.' The Council at this time showed a distinct disinclination to have tests and testing dominate its activities.

With the establishment of the Test Development Division in 1965 (following the recommendations of the Currie Commission quoted earlier and still further recommendations made to the Minister of Education by a special three-man committee) and the appointment late in 1965 of Warwick Elley as its energetic and talented head, test construction activities and related research studies moved into high gear. The Division had as its brief: 'The main function of the Division would be to develop tests and keep them under continuous review. Much of its early work would be directly related to the construction of those tests of attainment recommended by the Commission for primary schools, but it would not be limited to such work' (NZCER, 1965). Some preparatory work had, in fact, already been done by NZCER in commissioning technical briefs in subject areas (Fieldhouse, Freyberg and Lenz) and in general intellectual ability (Arvidson) prior to its acceptance of the Government's proposal.

Since the mid-sixties, NZCER's small Test Development Division has produced achievement tests for primary and secondary pupils in Reading Vocabulary (1969), Reading Comprehension (1969), Listening

Comprehension (1971), Mathematics (1974) and Study Skills (1978) in its *Progressive Achievement Test* series and re-normed the *Otis Tests of Mental Ability (Intermediate Form)* concurrently with the tests of reading (Elley, 1969). The development of these tests is fully documented in Chapter 6 of each of the teacher's manuals which accompany the tests.

The construction of each new test presents different problems which are researched by staff. Such mundane matters as print size, column width, page format, use of answer sheets vs answering in the booklet, speed of reading, methods of answering, content of directions, placement of stimulus material, use of colour and the like are investigated and mentioned or briefly outlined under Concurrent Research in the manuals for the tests. In some cases the studies are documented or written up in report form for limited dissemination and a few warrant publication, e.g., *The Effects of Coloured Stimulus Material on Study Skills Achievement* (Reid, Croft and Jackson, 1977); *Answer Changing on Objective Tests* (Jackson, 1978).

The validation exercises undertaken as part of the construction phase are also published in the teacher's manuals as are all the details of the actual development and standardization of the measures. Occasionally some of these studies may also be written up as research articles, e.g., *A Factorial Analysis of the PAT : Reading Comprehension, Reading Vocabulary and Listening Comprehension Tests* (Reid and Hughes, 1974); *A Rasch Analysis of a Test from the Progressive Achievement Test Series* (Jackson, 1979).

In line with the recommendation that the 'tests be kept under continuous review', investigations with a view to re-norming are conducted at regular intervals and the findings reported (Reid, 1975; Reid, 1978). Currently an interim report for a re-norming study of the *PAT : Mathematics Tests* is in preparation.

As Parkyn stated in 1965, 'the work of the Division will go on to the development of tests which will be used for a variety of purposes in the educational services and industry and commerce'. This has been the case increasingly over recent years with several major test development projects being undertaken at one time in addition to the 'bread and butter' work associated with the development and maintenance of the *Progressive Achievement Test* series.

Quite apart from the assistance given to NZCER honorary research workers, other NZCER staff, Government agencies, schools and other teaching institutions and commercial enterprises in developing their own educational tests and measures and/or using them to better purpose, officers of the Test Development

Division have been responsible for constructing and validating the *Language Achievement Test for Overseas Studies* (LATOS) for the Universities Grants Committee, and the *Police Entrance Test* for the New Zealand Police Department. The construction of two other tests of a similar type for possible development in 1980 are being discussed at present.

Other measures have also been developed, most notably, the *Study Habits Evaluation and Instruction Kit* (SHEIK) (Jackson, Reid and Croft, 1979), and *FOSSIC,* a rating scale for teachers to use in observing pupils' study behaviour (Jackson, Reid, Croft and Cowie, 1979). Both measures were designed to complement the *PAT : Study Skills Tests,* and were thoroughly researched.

Presently in the pipeline are several other tests or standardizations of overseas measures. A scholastic aptitude test for children aged 9 to 14 years, the first of two (the second a multi-factorial model), is to be standardized in April 1980. A spelling test of the proof-reading kind will be standardized concurrently. Plans are also afoot for New Zealand standardizations of Raven's *Standard Progressive Matrices,* the *Burt Word Reading Test,* and several advanced tests of general ability - *ACER Higher Tests AL-AQ, BL-BQ; B40/78,* and the construction of a measure of study attitudes to round out the SHEIK is also being investigated.

As with other institutional research of less-than-major importance, a good deal of what is investigated by Test Development Division staff remains unpublished and known only to a small coterie of researchers who have been involved, usually in a consultative role, at some stage during the research project.

Oversea Influences

In my historical overview I remarked that despite this country's remoteness and isolation from world centres of test development and research we have managed to remain tolerably well informed of oversea developments.

Today this information reaches us largely through articles in scholarly journals, reports disseminated by large research organizations (ETS, OISE, NFER, etc.) and through active participation or observation by New Zealand researchers on study or training leave or on exchange with other institutions.

To some degree we are always a little behind the play, particularly in psychometrics and to a lesser extent in test development work. The 'trickle theory' is clearly in operation; research appearing in journals is often years old if the time from the submission of the manuscript to the arrival of the journal on the library shelves is calculated. Sometimes it is also necessary to wait for sophisticated technology, and for trained personnel to handle the hardware to become available. Hence, we have come rather late to 'new' developments such as item banks, mastery learning and testing, criterion-referenced assessment, minimal competency tests, Rasch analysis, multiple-matrix sampling and the like. In some respects this is by no means a bad thing. The Americans, Australians, Canadians and sometimes the British encounter all the inevitable teething troubles and we occasionally learn from their mistakes and excesses. I would like to believe that our belated arrival on the scene sometimes permits us to do the job better. A good example of this is Warwick Elley's development of content-referenced norms for the *PAT : Reading Tests;* a breakthrough of sorts.

Presently, the major influences are from North America and in some specific areas of research from ACER in Australia and NFER in England. Such leadership is to be anticipated given the resources in terms of personnel and money that these countries are able to command and the opportunity they have to specialize. Whether they do a better job, dollar for dollar, is another matter. In this country we are severely limited in a number of ways and for the moment most of us must remain part-time researchers and in true New Zealand style, supreme generalists - able to turn a hand to most things.

Research Trends and Emphases

One facet of research from the 'evaluation of suitability' mould, and one which cuts across institutional boundaries, has been the relatively numerous studies of the validity of tests, notably scholastic aptitude and achievement measures, for Maori children. Living, as we do, in a multi-cultural society, this concern for the appropriateness of these tests can be expected. Although many of the studies are essentially comparative exercises, a proportion also contain an investigation of the suitability of the tests. St. George (1977) provides an excellent and informative summary of these research studies spanning 50 years or so in his doctoral dissertation. He notes (i) the exclusion of Maori children from most of the early standardizations and (ii) the lack of separate Maori and European analyses. St. George recommends that, in line with APA standards, future researchers should investigate matters of test reliability, test validity and test item characteristics separately for minority populations.

Historically it is possible, despite the meagre number of studies and the fragmented nature of the field, to detect several phases in the research on educational measurement and testing. The earliest was an experimental phase - overseas tests were tried and their suitability for New Zealand conditions was evaluated. Local norms were developed for those judged to be satisfactory. To some extent, this trend has persisted to the present and will no doubt continue in the future. For the moment it is left to the enthusiasm of a handful of researchers to investigate tests and measures released recently by overseas publishers and institutions (e.g., *British Ability Scales, WISC-R, Tests of Children's Learning Ability, Tests of English for Migrant Students*).

Then came a period of national standardizations in the areas of general mental ability, reading and arithmetic. With one exception, these were unadapted overseas measures for which New Zealand norms were derived.

With the growth of a greater research capability within the Department of Education together with the establishment of specialist divisions and the setting up of the Test Development Division at NZCER, tests or assessment devices designed to fulfil particular functions have been developed specifically for New Zealand conditions. While the range and variety of these measures is by no means extensive, teachers and others are, I believe, better served than they have ever been in the past.

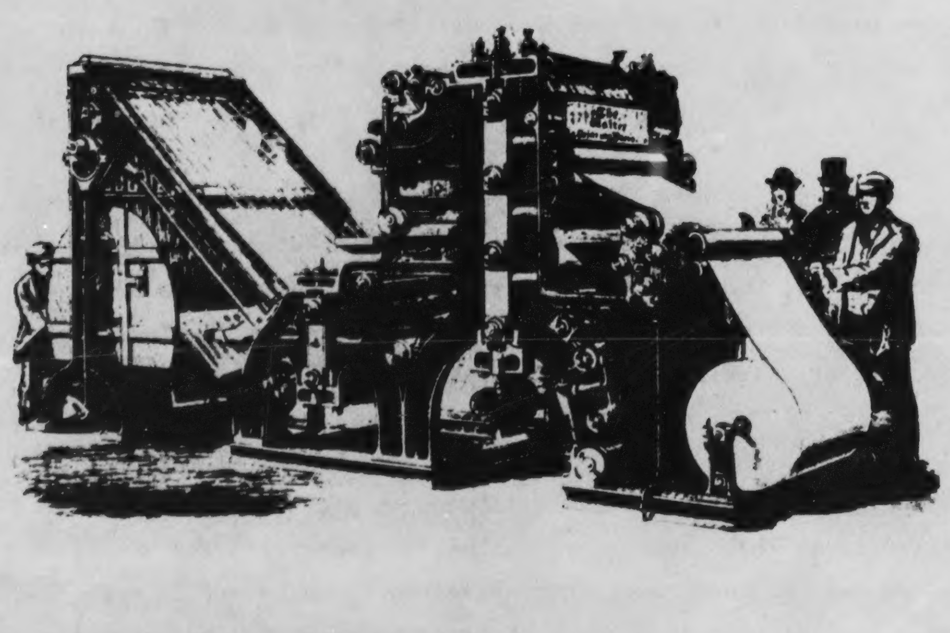
The vast majority of the research has focussed on cognitive aspects within the field; the affective and psychomotor domains remain virtually untouched. So, too, the area of psychometrics where those few investigations that have been mounted have been initiated by 'professional' researchers or university staff specializing in statistics/psychometrics.

Conclusion

From the fragmented and obviously incomplete picture I have presented it is difficult to reach any other conclusion, pedestrian and unimaginative as it may be, that more and better research is necessary in every facet of the field. There is no lack of pressing problems, both for the practitioner and for the policy-maker. It is not within the scope of this paper to state what these problems are or who is to research them - that is quite a different story.

I have been rather optimistic in reviewing the research on educational measurement and testing; I want desperately to believe that what is published in journals and reports represents only a fraction of what is actually being undertaken in this country. Perhaps I am deluding myself; but there are faint signs and intimations as I have indicated, and informants in a variety of institutions approached as part of this exercise in presenting the state of the art seem to share my impression.

What is abundantly clear, I think, is the lack of documentation, publication and communication among the researchers working in and around the field of educational measurement and testing. It transpires that few of us know what others are doing now, or have done recently. Obviously, too, what research activity there is can be of little value unless available information can be put into the hands of those practitioners and administrators to whom our findings might be of use. Therein lies the challenge; perhaps the fledgling NZARE may be able to provide the forum and the dissemination network whereby we achieve a free, fast flow of information to those who seek it or need it.



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Commentary

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Neil Reid has provided us with a very useful state of the art paper reviewing research specifically directed to the field of educational measurement and testing in New Zealand in the last few years. He deliberately restricted its scope to the development and/or investigation of the characteristics of measuring instruments, rather than their use and therefore he excluded any consideration of once-off measures specific to particular research projects. As he pointed out, there are no doubt some potentially useful instruments described in such studies - as starting points, if not as polished instruments. One of the tasks which NZARE might set itself would be the maintenance of a register of such instruments as an aid to other research workers. This could be a less elaborate equivalent of the *Handbook of Tests in Child Development.*

Neil also pointed out the extreme paucity of research in New Zealand dealing with basic considerations in educational measurement. There have been some small but indicative studies comparing, for example, different test formats, the use of colour and type faces etc. We make many assumptions in constructing our tests and we need more investigations of this kind on a continuing basis.

As one reads Neil's review, several other points emerge which I think we will need to consider further in the years ahead:

1. Our reluctance in the Social Sciences in general and in Education in particular to direct students on to specific projects. Progress in the Physical Sciences, for example, is accelerated by the practice of 'requiring' senior students to work on specific projects in which their supervisor is engaged.

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1. Neil Reid, *Research on Educational Measurement and Testing in New Zealand.*

2. The resulting diversity of projects leads to very scattered research : it involves a shotgun type of approach to very complex problems.

3. Senior students have obviously been unwilling in this country over the past few years to undertake theoretical studies in the measurement area. There is little doubt that this is partly the result of an anti-measurement outlook which has developed in some quarters, but also reflects the lack of mathematical and statistical background which is usually necessary. Unless we can counteract the situation it is likely, in my view, that future research will be hamstrung through lack of qualified measurement constructors and measurement instruments.

4. During the discussion of the papers, questions of dissemination of information about current potentially significant research projects arose several times. There would seem to be a case for some kind of clearing-house for information about (a) people currently working in the measurement field (with perhaps a little more detail than is available in the register of NZARE members); and (b) brief information about tests being developed at the present time - no matter how embryonic they might be.

The papers presented in the measurement series at the conference bore out the analysis that Neil had made of past research. There was only one theoretical paper.[2] There were two papers dealing with specific test construction problems : one on the validity of three types of spelling tests[3] and the other on context effects in essay marking.[4] There were two papers dealing with national examinations[5] and only one paper which described the development of a new test[6] - an attempt to explore children's science concepts in a very specific area.

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[2] Peter Jackson, *Latent Trait Analysis.*

[3] Cedric Croft, *An Investigation Into the Validity of Three Types of Spelling Tests.*

[4] David Hughes, Brian Keeling and Brian Tuck, *Context Effects in Essay Marking.*

[5] Bruce Ramage, *Inter-School Moderating Tests;* B.A.M. Moon, *Are 'Pass' and 'Fail' in School Certificate and University Entrance Obsolete Concepts?*

[6] Beverley Stead and Roger Osborne, *Exploring Science Students' Concepts of Light.*

Professor Lawrence in criticising (fairly enough) some of the research which has been conducted in the measurement field over the past few years referred to the use of instruments with little or no check on their rationale or efficiency. If we are honest we must recognise that most assessments of validity involve some circularity of argument : the new test is compared with an older test which was compared with an earlier test, and so on. There are however some current improvements on this procedure. For example, NZCER has taken particular trouble to involve teachers in the construction of items and checking of item validity in tests in the PAT series. Lawrence himself evaluated the OTIS test in 1955 by examining the reasons for children giving wrong answers to specific items. Ten years later I attempted to demonstrate the validity of a multiple-choice test by checking it against a clinical type of administration of the same items and in the *Learning in Science Project* currently under way at the University of Waikato, we are reversing the usual validity checks by starting with instances of behaviour and devising items to categorize these rather than starting with categories of responses (answer choices).

As I see it, the current situation in the field of educational measurement is one of pessimism : that what we are doing is really not adding much to our knowledge of people or of the educational process. We are well aware of the defects in many procedures that have been employed in the past - lack of validity, spurious precision, inappropriate analysis (analysing the noise rather than the message). Nevertheless, research in most fields can proceed only a limited distance without precision of observation. Qualitative observation alone may obscure the relationships in which we are interested : to take an earthy analogy, some plants grow better in an acid soil, but the degree of acidity is vital. It is often not just a matter of what, but of how much. Our problem, in education as in many other areas of human concern, is to determine the degree of precision required to answer the questions we ask.

Classroom Studies in New Zealand: Whence and Whither?

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This paper is an attempt to review the research carried out in New Zealand classrooms over the last decade. The coverage includes theses[1], published articles[2], conference papers and unpublished reports. As might be expected the majority of these investigations are the products of university-based research. However, we did actively seek information on research undertaken by Teachers College staff, government agencies and other parties. But in spite of all our efforts there are probably some studies we will have missed. As well, we had difficulty getting access to some of the studies we did locate. So the coverage, inevitably, is incomplete but, we think, fairly representative.

Before we begin the actual review, it is important to indicate the parameters for the field of research with which we will be dealing. There is no clearcut definition of what is and what is not classroom research. American social psychologists were amongst the first to approach studies in classrooms in a systematic way[3]. They soon became largely concerned with establishing systematic coding procedures for grouping observed behaviour in predetermined categories[4]. The initial category bases were related either to teaching technique (Barr, 1948) or to general typologies reflecting ideological commitments to democratic leadership or climate, to indirect approaches to instruction and to supportive and pupil oriented procedures. A further feature of many of the American category systems was the pervasive, often subtle influence of the stimulus-response learning paradigm[5].

A paper presented at *Research in Education in New Zealand: A Balance Sheet*, First National Conference of the New Zealand Association for Research in Education (NZARE), Victoria University of Wellington, 7-10 December, 1979.

This systematic observation approach is commonly referred to as interaction analysis, a term which is frequently used interchangeably with 'classroom research'. British researchers initially used similar category schemes in defining classroom interaction but have recently developed a whole series of recording systems (Galton, 1979). As a consequence of the increased participation of sociologists, anthropologists and linguists classroom research systems have broadened dramatically from the initially *a priori* observer's approach. Although much of the American work remains segregated within individual disciplines and little dialogue exists between them, the British tradition is characterised by a much more interdisciplinary union, even though it has not always been an amicable one. New Zealand research has been influenced by both the American[6] and British traditions. Educational researchers in New Zealand appear to have been more influenced by the latter when it came to identifying with or communicating across disciplines[7]. However, it was often the American systematic procedures which became the preferred methodology and research style.

The foregoing provides a partial explanation of why we shall be using a broad-brush approach to the field of classroom research. We are interested in any work, irrespective of disciplinary affiliation, which looks at the classroom process. By that, we mean any work which has been concerned with the actual day-to-day operation of classroom life. We are not interested in input-output studies which treat the classroom as an unknown black box. On the contrary, it is the daily life of the classroom (Jackson, 1968) which gives social meaning to the participants. Such an emphasis means that most of the work we review will be of the kind where researchers have actually spent time in classrooms observing what is happening. However, we will not limit our review to observation studies only. It is also possible, although somewhat more difficult, to obtain an understanding of classroom operations through questionnaires and interviews.

This paper will first present a discussion of a substantial corpus of the research which has been completed in New Zealand since 1967[8]. The studies will be divided into six main topic areas: teacher/parent/student expectations; teacher location, classroom structure and participation; behaviour modification; achievement studies; teaching strategies and student thinking; and recent developments[9].

Following the discussion is a review of trends in both America and Britain and some suggestions about the direction New Zealand research might take.

New Zealand Teacher/Student/Parent Expectation Studies

Ever since the landmark and controversial piece of research by Rosenthal and Jacobson (1968) researchers have taken an active interest in the expectations teachers have of their pupils (and vice versa) and the effects such expectations may have on subsequent interaction and achievement. St. George (1978) and Haigh (1973, 1974) both made this a central concern in their research. They observed teachers interacting with their pupils in regular classrooms. The interaction for Haigh was confined to discussion time immediately following a story which was read by the teacher, while St. George observed a variety of curriculum activities. In each case, trained observers recorded the interaction patterns between the teacher and those individual students whose potential the teacher had been previously asked to evaluate. The two studies provided data which at first glance appeared to conflict. Haigh reported that students who were regarded by the teacher as high performers received more primary question contacts and response opportunities than did those regarded as low performers. St. George found no significant differences between high and low expectation groups in the quantity of public or private response opportunities. However, when type and complexity of questions were taken into consideration, it was found that high expectation students received the more complex questions.

Ashcroft (1972) investigated the relationship between parent/teacher belief systems (i.e., about the treatment of children and the purposes of education) and interaction patterns between the teacher and student. In an attempt to understand the intricacies of a school situation where some students were regarded as problems by some teachers and not by others, he hypothesized that diverging parent-teacher beliefs about schooling could act to hinder teacher-pupil rapport. He found that where there was dissensus between the teacher and parent, even though neither knew the other's belief system, there was a higher incidence of negative sanctioning and positive directing by the teacher towards that student.

Wright (1969) and Pennell (1970) evaluated the nexus between pupil and teacher expectations. Through the use of questionnaires Wright evaluated teacher and student beliefs about the stimulation and motivation of pupils in a single high school. He found that students think teachers are generally more positive than negative and that they work harder for those teachers perceived as the most positive. Nonacademic students regarded teachers as being more negative. Pennell interviewed and surveyed teachers and students to compare their views on school life. He found the perceptions of teachers about student likes/dislikes to be accurate and observed that activities considered valuable by teachers were nevertheless infrequently offered. The one disparity between teacher and student perception was about which classroom problems might be considered the worst problems.

Smart (1977) was also concerned with teacher expectations and their effect on placement of low IQ students in special classrooms. She found that low IQ students are more likely to be transferred to special classrooms if teachers hold low expectations about their own ability to cope with such students.

Summary reviews of overseas studies (Elashoff and Snow, 1971) conclude that, generally speaking, teachers are accurate over time in their assessment of the academic abilities of their own students. Where inaccuracies are reported, they are more common in contrived situations (i.e., where false information about relatively unknown students is supplied). Furthermore it seems that there are expectations which are subtly conveyed and which can act as self-fulfilling prophecies. The New Zealand investigations tend to confirm such conclusions although it is noteworthy that the trend here has been to observe in naturalistic, on-going classrooms with little intervention. While the construct of 'expectation' gives some coherence to these reports, different explanatory theories are suggested. These tend to originate within social and educational psychology and in sociology. The interpretation made here is that there is a growing trend towards an interdisciplinary approach to expectation. Bates' (1977) argument that a role-theory view of expectation presupposes a static and hierarchical society and that some dynamic self-image (or attribution) view is needed to account for change is seen as relevant here.

Two further questions are evoked by a survey of the indigenous literature. What are the means by which expectations are communicated in classrooms? Has too much reliance been placed upon the study of interaction patterns in classrooms as the preferred way of attempting to understand expectations and their consequences?

New Zealand Teacher Location, Classroom Structure and Participation Studies

This field of study has been markedly influenced by the pioneering work of Adams and Biddle (1970), amongst the first researchers to introduce the use of videotape in the classroom. They postulated that the seating position of a student in the classroom relative to the location of the teacher had an important influence on the frequency of participation by that student. They further proposed that participation frequency would be positively correlated with achievement. McGregor (1974) used direct observation in four classrooms and found that teachers do, indeed, spend more time near the front rows of the classroom but that student participation was not affected by location. Bates (1973) videotaped two classrooms and found little evidence to support the argument that there is any relationship between location and participation, participation and achievement, or location and achievement.

Codyre (1973) compared a number of classrooms across two types of lessons, mathematics and social studies. He found that there were important differences between lesson types in the location of teachers, and content and level of verbal interaction. Gill (1977a, 1977b) investigated the effects of classroom architecture (various seating arrangements in self-contained classrooms and open plan vs conventional classrooms). He reported no significant difference between open plan and conventional schools in their interaction patterns. Although there was some effect consequent upon type of desk seating arrangement, this environmental effect was further compounded by class interactions i.e., the effect of change was dependent upon individual teacher's reactions.

The reports on teacher location have increased in complexity from descriptive accounts of teacher position and movement and associated participation patterns to those in which such other factors as sociometric group patterns, architectural and organizational features and curriculum have been added. The original investigations were undertaken during a period when teaching had been conceptually disentangled from learning (Smith, 1960) and could legitimately be observed as the role-relevant activities of the members of a profession. Part of the increased complexity may be related to the difficulty of excluding intention and purpose from accounts of teaching. The construct of teacher location is clearly appropriate for a descriptive mapping of classroom events and where explanation is not the goal. Where explanatory theory is the goal other concepts (e.g., political power and territoriality) may be more useful.

New Zealand Research on Behaviour Modification

Since the New Zealand research on behaviour modification, to use the original term, is reportedin a separate paper and since it also has a strong within-group similarity, it is expedient here simply to summarise the general trends, pointing out commonalities and incongruities. Nevertheless, it is important to include a sampling of these studies, for they are numerically predominant amongst the types of classroom research under consideration. For instance, 5 of 15 reports of classroom research to be found in the *New Zealand Journal of Educational Studies* belong to this genre. Furthermore, these reports demonstrate the impact which some individuals have in stimulating further research. Church at Canterbury and Glynn at Auckland are two, amongst others, who have provided leadership in this field.

In eight of the nine studies discussed in this section the researchers observed classroom behaviour and noted any changes which resulted from experimentally introduced reinforcement. The one study which was not concerned with observed behaviour (Ashe, 1971) focussed on test performance. Five of the eight observation schemes were interested in 'on-task' behaviour (Jackson, 1973; Roche, 1974; Glynn and Quinnell, 1971; Thomas and Adams, 1971; McNaughton, 1975). Two researchers observed a similar 'appropriate' behaviour pattern (Fry and Thomas, 1976; Adams, 1974) while the final researcher recorded rates of 'disruptive' behaviour (Ellery, Blampied and Black, 1975). Most researchers observed target students for a number of 10 second intervals and recorded whether they were on-task or off-task. Ellery, Blampied and Black divided the lesson into one minute intervals and observed whether any disruptive behaviour by students occurred during that time interval.

In most cases the research was designed so that students acted as their own control. In other words, a baseline period of behaviour was observed, a form of treatment was administered during which behaviour continued to be monitored, and finally a reversal period was observed where students were exposed to the original baseline conditions. In all cases in the research reported here the students were observed in their regular classroom settings[10]. The treatment usually consisted of positive reinforcement/praise by the teacher for appropriate or on-task behaviour. Off-task behaviour was usually ignored. In addition to praise, Thomas and Adams (1971) built in a system of class rewards, Fry and Thomas (1976) introduced a token economy and Adams (1974) offered peer reinforcement and praise by the principal. Roche (1974) compared the effects of individual versus group contingency, while Ashe (1971) and Jackson (1973) were concerned with the differential effects of self-reinforcement as opposed to teacher-reinforcement.

In another, Siepkes (1973) reported that improved conduct with one class of difficult pupils was sustained with the teacher who initiated the treatment, but did not appear to generalise to other teachers. In several instances researchers reported that improved behaviour stabilized even after reinforcement was withdrawn. Fry and Thomas (1976) suggested that token reinforcement was effective for extended periods after it was removed and even after the students were mainstreamed from their special class into a regular class. One research report (Thomas and Adams, 1971) suggested that behaviour improved for the control group as well as the experimental one, while yet another researcher (Jackson, 1973) reported that behaviour for his control group remained the same. Glynn and Quinnell (1971) found that praise of on-task behaviour worked equally well for well-behaved and poorly-behaved students. On the other hand, Roche (1974) noted that praise worked best for better students.

The behaviour modification studies initially revealed a concern with control in the 'good conduct' and 'on-task' senses. We note the emergence of a focus on the learning task itself. For example, among the recent reports one finds references to such learning tasks as reading performance (McNaughton, et al., 1979) and cognitive skill (Sass, 1977). Another characteristic has been the movement from other-provided to self-provided reinforcement, from the control of behaviour by the teacher to pupil self-control. Parallel to this latter trend has been a move from a rather strict application of a technology to a less constrained view of the technology itself. This latter state may be better termed the applied analysis of behaviour than behaviour modification.

It may well be that these trends which are away from the earlier rather doctrinaire approaches, have been instrumental in furthering the classroom acceptability of the applied analysis of behaviour. Certainly the work of Glynn and his colleagues at Auckland and of Church and his students at Canterbury has made a major contribution in this direction. The development of notions of self control, self evaluation, and self reinforcement and of modelling (Bandura, 1977) point to the possibility of rapprochement between cognitive and self theories and applied behaviour analysis. But perhaps the moves to self-control and to 'liberalising' of the technology have contributed less to the burgeoning of such studies and to application of the procedures than has the pragmatic observation that behaviour modification 'works'. Given the near unanimous verification of the effectiveness of the procedures, as they are recorded in the literature, it is interesting to note that they are not used universally by teachers. There may be a need to look at the structural, ideological or other factors which make it difficult for classroom teachers to adopt such innovative methods or techniques.

New Zealand Achievement Studies

This group of investigations differed in the kinds of independent variables they employed, but all had the common goal of predicting achievement outcomes. Hughes (1972, 1973) was interested in the relationship of student response patterns and student participation on residual achievement scores. He experimentally created three types of teacher questioning patterns: random, systematic, and where students decided whether or not to offer a response. He found there were no differences in achievement as a consequence of questioning patterns. However, in observing student/teacher interaction he found that there was a significant difference in achievement between those who received positive feedback from the teacher and those who received none.

As a linguistic psychologist, Daniels (1975) researched the effects of teacher language patterns on student achievement. He tape-recorded social studies lessons in 14 different classrooms and analysed the transcripts of teacher monologues. He found that student performance was not affected by teacher questioning behaviour. He did report that content-relevant discourse produced better achievement and indicated that shorter units of discourse tend to be associated with higher levels of achievement. On the other hand, short sentences had a negative effect on achievement while moderately long ones had a positive impact.

Wright (1975) investigated the effect on student achievement of teacher experience and type of interaction within their classrooms. He observed three groups of teachers: experienced, student teachers with micro-teaching experience, and first time student teachers, and recorded their interactions with students during three pre-planned science lessons. He found that there was no difference in student achievement amongst the three teacher groups when IQ and previous knowledge were controlled. However, he did report four categories of teacher talk which had a significant impact on achievement: solicitation patterns, praise/thanks, revision, and solicitation directions.

Both McGee (1978) and Hunkin (1969) used inservice techniques in an attempt to alter achievement patterns. McGee introduced an inservice training programme to change teacher questioning behaviour and associated verbal interaction. He found that teacher questioning behaviour was altered by the programme and that there was some improvement in achievement, particularly with evaluative and divergent thinking. Hunkin evaluated the difference between a structured sequential teaching method and the more traditional familiarization approach, both of which were introduced in a six hour in-service training course. He reported that between inservice training courses there were no significant differences on student achievement. Nor did he find in analysing the videotapes of the teachers using these techniques that comments of particular kinds had the anticipated facilitating effect on achievement.

Archer (1970) investigated the relationship of students' cognitive styles and teachers' instructional methods on learning outcomes. He selected three cognitive styles (descriptive, categorical and relational) by a pencil and paper test and exposed two classes each to two different instructional methods, rule-explained and rule-derived. An observation system revealed that rule-explained instruction produced more teacher-lecturing, less teacher-questioning and less pupil talk than rule-derived instruction. He found that students introduced to rule-explained instruction had higher initial learning and higher retention, but there was no difference in transfer. He reported no interaction effects with cognitive style and instructional method.

The cluster of achievement studies (sometimes classified as process-product studies) continues a long search in education; one branch of this research has been named 'aptitude-treatment-interaction' (ATI) research and owes much to the impetus of Cronbach (Cronbach and Snow, 1969). This group of studies, like the applied analysis section, is concerned with 'improving' rather than just 'describing', often uses experimental or quasi-experimental approaches, and often involves a measure of intervention rather than the less intrusive observational style of research. Although, in general ATI studies have produced no clearly established set of individual difference variables that interact with defined treatments to produce certain achievement or other outcomes, they have underlined both interaction and complexity as characteristic of classroom learning. Linearity in the statistical models, unidirectionality in treatments and simple association as a basis for explanation are all found wanting in comparison.

At the same time some commentators, for example, Hamilton (1977) question the assumptions and appropriateness of the experimental model which underlines much of the research. They suggest each classroom is a unique combination of actors and social constructions. Church (1976) remarked on the difficult-to-define but nevertheless powerful effect of each class of pupils as a unique social group. What is manipulable and to what extent that manipulation accounts for a significant proportion of variance is both a theoretical and an ethical question, which is yet to be resolved.

New Zealand Teaching Strategies and Student Thinking Studies

This selection of research documents is influenced by the work of Nuthall and his associates at Canterbury (Nuthall, 1962; Nuthall and Lawrence, 1965). Their work has, in turn, been influenced by Smith and his colleagues at the University of Illinois (1960, 1962, 1967). The researchers in this group were interested in the logical structure of the teaching process and its effect on student thinking.

Pearson (1969) investigated the relationship between evaluative discussion as a teaching strategy and its effects on cognitive interaction between teacher and pupils. He dichotomised the classrooms into direct and indirect and looked at the influence of the two on cognitive interaction. He reported that direct teaching methods were connected with 'restrictive' content and that indirect teachers use more evaluative terms and covered a greater range of evaluative content. The implication was that the restriction of evaluative discussion by direct teachers provides, ... impoverished opportunities within socialization and logical processes.' (1969:161).

Francis (1971) experimentally manipulated the teaching strategies for two nature study lessons; the first emphasized the content of the topic (i.e., pupil learning), while the second focussed on thinking about the topic (i.e., pupil thinking). He observed behaviour in eight classrooms across both conditions. He found that teachers were able to produce more thinking in the lessons when this was their intention. However, this emphasis in thinking did not have any impact on short term learning or transfer of information. He did, however, find a marked difference in the teacher's behaviour between the two levels observed, Standard 3 and Form II. Form II teachers lectured more and summarized the ideas of their pupils more frequently. Standard 3 teachers were much less consistent in their teaching behaviour.

Brooker (1977) was concerned with uncovering the strategies used by students in the learning process and with testing their relationship to retention of the learned material. He used in-depth interviews with 44 students and uncovered three major strategies: selectivity (note-taking), self-questioning repetition, and pictorial imagery. He found that antecedent variables (IQ and reading comprehension) had more of an impact on retention than did any of the learning strategies.

Rogers (1975) probed the question of whether the introduction of new teaching strategies would alter teacher performance and, in turn, whether changes in teacher strategies would have an impact on students' responses and levels of thinking. He observed and recorded interactions during the discussion of a reading lesson. An inservice training course was designed to alter teacher strategies. He evaluated student thought processes on a seven point scale and found there was a significant difference between classes for both low and high level thought categories.

MacLean's (1977) research question differed from the others in this section. He asked what were some of the factors influencing the attending behaviour of teachers. From a sample of thirty-five teachers, eight were studied more intensively using direct observation in addition to paper and pencil tests of attending style, an attitude scale, and biographical data. The *Gestalt Completion Test*, used as an indicator of a holistic attending style was related positively to observed teacher behaviour and to a number of teacher biographical variables. The index of attending behaviour was based on observed teacher responses. Holistic rather than analytic attending, and responsive rather than initiating behaviour seemed typical of this teacher group.

The work of Katterns (1979) and Church (1976) is noteworthy for both compass and thoroughness. Church manipulated specific teaching moves (e.g., question type and sequence, teacher response and reaction) while controlling other moves in a standardized set of lessons. The use of only one specially trained teacher across classes and lessons allowed for rather precisely specified variations and the evaluation of quite detailed consequences in lesson analyses and learning outcomes. Katterns, too, employed a relatively sophisticated experimental design with different forms of micro-teaching (including the use of different media, different 'pupil' groups, different question types and various treatment combinations), observation analyses of teaching and the regular pre-service principles of teaching courses. The multi-coding of observations, the goal of flexible and sensitive teacher use of questioning, and the many faceted approach to variables and combinations of variables demonstrated in both studies is a measure of the extent to which recent research attempts to recognise the subtlety and rich variability of classroom life.

The strategy/thinking studies are particularly process oriented. Process studies raise the problem of degree of inference, be it high or low (Rosenshine, 1971) and the related question of validity. The reports reviewed here all addressed this issue, often through reference to the consistency with which observations matched the theoretical models employed. In contrast, low inference studies present fewer validity and reliability problems; they also tend to have restricted compass and generalizability. The issues of generalizability and validity are highlighted by the growth of the case study as a preferred method. Implicit in each of the five sections reported here are assumptions about criteria either of outcome or effectiveness. The strategy/thinking form of classroom research emphasises cognitive processes or criteria. The research surveyed here re-emphasises the complexity of classroom relationships. While the studies have, in the main, been concerned with the effects of teacher strategies on student thinking, it is likely to be equally important that consideration be given to the effects of student thinking on teacher strategies, of student strategies on teacher thinking, and of teacher thinking on student strategies.

Recent New Zealand Developments

The work of Munro (1976, 1977a, 1977b, 1977c, 1978) offered a refreshing change from the largely psychological, quasi-experimental, empirical work which characterized most research reviewed in this paper. Munro is a social anthropologist whose theoretical orientation is derived from a social construction of reality perspective (Berger and Luckman, 1966). He argues: 'That which someone consistently thinks of his(her) life in a given context is to him(her) the reality of that life'. (1977b:1). He has recently been involved with two projects, *Enquiry-Based Teaching* (Munro, 1976) and its successor, *Classroom Monitoring* (Munro, 1977c). Both projects have sought to help teachers learn more about student perceptions through the use of a classroom visitor who talks with the students about their classroom lives and feeds the information back to the teachers. The basic rationale behind such an approach is that to make improvements teachers need to know the consequences of their teaching patterns. Student opinion is regarded as the best source of information[11].

Data collection for Munro is usually in the form of audio and videotape recordings. He edits transcripts of classroom conversations with both students and teachers as a basis for case study analyses[12]. These edited excerpts provide the basis for drawing conclusions about life in this particular classrooms. Munro is hesitant to make any generalizations from his 'data' since he argued that the structure of teaching and learning is so idiosyncratic. Nevertheless, his work does reveal a number of interesting points.

In his first project on enquiry-based teaching, Munro documented three basic aspects of classroom life: teacher aspirations, classroom activities and pupil comments on those activities. His 16 teachers defined enquiry-based teaching as pupils carrying out independent study of a topic individually or in small groups. He found six pupil requirements for effective enquiry-based programmes:

1. An expectation that enquiry-based activity is legitimate and worthwhile.
2. They have the necessary skills to obtain and process information related to the question being asked.
3. There is access to necessary sources of information.
4. The teacher trusts that the pupil will carry through an investigation independently.
5. There is sufficient security in the classroom to use it as a base for initiating enquiry.
6. There are sufficiently long periods of time to establish continuity in projects.

The most difficult stumbling block was the first condition; students and parents felt that school work and learning were about facts and that the students' own enquiries were just a form of play.

The goal of the latter project on *Classroom Monitoring* has been to explore ways of helping teachers make use of their students' knowledge about classroom life. Munro devised a monitoring system so that teachers could cooperate with one another in obtaining information about students' perceptions of their classrooms. He has developed an inservice training manual (Munro, 1978) which outlines how teachers can implement monitoring procedures and what results to expect. He suggests that such an evaluation system has the positive effect of breaking down the sense of professional loneliness and improving teachers' awareness of the consequences of their teaching.

The one major qualification one might make of this otherwise excellent work is that it fails to make any reference to what teachers can do with the information after it is collected. Conscientization is useful in its own right, as Middleton (1979) suggests in her phenomenological interpretation of the teaching role, but is it enough to change behaviour?

Another promising new tangent in classroom research has been taken by Freyberg (1979) and Haigh (1979) in their preliminary discussions about the relationship between teacher intentions and actual decision-making during the course of a lesson. They were interested in knowing to what extent teachers change their intentions and just what factors seemed to provoke these changes. Freyberg raised some of the theoretical and methodological issues concerning purposes, intentions, and plans of teachers. Haigh suggested four basic data collection procedures for gathering such information and discusses some of the problems associated with them. No data from teachers has yet been reported.

A further classroom-based research project recently initiated is the *Learning and Science Project* (Osborne, Freyberg and Tasker, 1979), which is concerned with the teaching and learning of Form I to IV science. In its exploratory phase the project is undertaking an evaluation of the philosophy of the curriculum, a content analysis of the curriculum, and a survey and observation of the learning environments. Both methodologically and substantively, this research programme promises to be important to practitioner, curriculum designer and educational researcher alike.

An evaluation of year one teachers has also been started at Dunedin Teachers College (Harper and Maxwell, 1979). Their preliminary paper reported the findings of a baseline year of recent graduates in the teaching profession. They evaluated their performance by observing teacher behaviour in four basic categories:

1. The level of student activity and participation.
2. The questioning style of the teacher.
3. The degree to which interest is being stimulated.
4. The flexibility and clarity of organization.

This baseline will be used to compare results with the first year BEd. students who will begin teaching next year. We see evaluation studies of different kinds occupying a more central place in Teachers College research.

Teachers and Classroom Research : The Eternal Problem

Nuthall (1978) has offered several reasons for the communication gap between teachers and researchers. He suggested three aspects of the problem:

> Teachers do not see how the information provided by the research can guide their work, they do not find the information they do understand either credible or more convincing than their own common sense, and they do not see why they should spare any effort to do something about it.

The four reasons he offered in justifying the reactions of teachers to the research findings are cogent. First, the research procedures and statistical models are regarded as inadequate or inappropriate (Hamilton, 1977). Second, the knowledge gained from conventional research is rarely of the kind that can be used by teachers (Elliott, 1976). Third, researchers as a group are not seriously committed to the problems of day by day classroom teaching. Fourth, it is difficult for teachers to overcome the conservative pressures which oppose change of any kind.

We suggest that there are still other factors limiting the free flow of research information. A specific language problem is manifest with the operational definitions employed in conventional 'normal' research. The gap between the participant and the observer frames of reference is not bridged with ease. A further positivistic trend in research has been to assume that the teacher or the teaching method is the independent variable and that student behaviour is the dependent variable. Such an assumption may not be consistent with a teacher's perception of classroom life. The symbolic interactionist position places teacher and pupil more equally in balance. Teachers, themselves, often talk as though they are more responsive than initiating or directing.

A second major group of factors relates to the theory-practice distinction which has become part of the folk-lore of teaching. It is as if teachers are pointing out that the researcher's reality of abstracted concepts and categories, placed as a template over the on-going life of the classroom, is of a different order from their reality of experience and engagement. For instance, Elliott (1976) has tried to identify the practical constructs of teachers and to consider them as hypotheses for classroom research. Such an approach seems to make sense to the practitioner.

Those who wish to undertake research in classrooms are more aware than ever of the complexity and pace of classroom life, of the interdependence of variables, of the ethical and practical problems of intrusion, and of the multi-level nature of the teacher's tasks. One senses a genuine desire to share data, procedures and tentative conclusions with teachers. At the same time, there are for the researcher some pointers which raise questions about the kinds of advice often given teachers and the kinds of comment made about classrooms. For example, the research on questioning indicates that the simple-minded exhortation for teachers to ask more 'high-level' questions is often not helpful, because so much depends on cognitive context and purpose. Church (1976) found that asking questions in random sequence made little difference to learning outcomes. Codyre (1973) reports that while an average of three questions a minute could be recorded, there was great variability both between teachers and with the same teacher across time.

The classroom interaction patterns, are both more varied and subtle than Flanders' system could indicate. St. George (1978) and Katterns (1979) demonstrate that expectations, purposes and communication networks influence interaction patterns in ways which cannot be captured by frequency counts or simple sequences based on a one-level view.

It is noted that the content-matter providing the cognitive setting for classroom studies has, almost without exception, been confined to certain curriculum fields - mathematics, science, reading and social studies. It is rare to find studies of the less structured fields of art, drama, literature and aesthetic activity generally. If certain models of teaching are implicitly linked with certain subjects, then one must wonder whether the researcher's selection of subject is also an indication of his(her) model of teaching.

How might this hiatus between practitioners and researchers be overcome? There are many possibilities: translations as in the *set* publication produced by NZCER, changes in methodology from the conventional agricultural models to anthropological ones, changes in focus to learning as experienced rather than teaching as observed - and so one could go on. One trend which is emerging both here and overseas is for a cooperative development in which the teacher is seen as a research colleague and where the participant's reality is acknowledged and where theory and practice are seen as a false dichotomy. This is one likely direction for future research in New Zealand.

Perspectives and Directions

Classroom research in New Zealand has been primarily the domain of those with a psychological perspective; sociologists have, in comparison, been much less visible. The situation was similar in the earlier work in Britain and America but more recently sociologists have taken an active and stimulating part in research in classrooms (Delamont, 1976; Boocock, 1978). Changes in the orientation of each discipline have been evident during the last ten years.

The sociological perspective has been influenced by the recent work of symbolic interactionists and exchange theorists who underline the complexity of classroom events. The social system of the classroom is an intricate web of inter-relationships, linked at many levels and in many directions, with each member influencing and being influenced by each other member[13].

Educational psychology has been released from the positivism of Watsonian behaviourism, from the shackles of a misused system of psychometrics and from the constraints of a particular experimental methodology. The growing interest in ecological psychology, in attribution theory, the rediscovery of cognition in learning, of meaning and understanding, and of unobtrusive observation as a powerful procedure, have all provided a new impetus.

Cohen (1972) suggested four facets of sociological inquiry which are of direct relevance to educational researchers. First, there are the studies of the school as an organisation, studies which report wide variability in instructional activities and which consequently and necessarily minimise the chances of systematic relationships with student behaviour and learning. Second, there are the studies emphasising the inequality of the impact of teacher on student. Third, there are the studies of important status systems affecting pupil behaviour. Rosenholtz and Wilson (1979) suggest that academic status is important, having its roots in the structural features of the classroom. Sociometric status, as Wilson (1979) documents, interacts with other status categories. Finally, sociological studies have explored the teacher's role as a bureaucratic figure in the school with authority to control and evaluate student behaviour. This control function often takes precedence over other goals.

Cohen's observations suggest that there may at present be no point in pursuing a goal of a grand theory of teaching, or indeed of learning. It may be more profitable to break the intricacies of classroom life into smaller, more manageable units.

Educational psychologists have also found it more realistic to construct limited theories such as mastery learning exemplifies. Because the research has been so diverse, however, no coherent body of conclusions can be found to organise the field. The difficult path is avoiding the trap of reductionism and the seduction of grand theory.

Some of the work through the sixties and into the seventies reflects an enchantment with observational category systems which then multiplied as though generating a life of their own. There was, too, a tendency for some to charge off into a research arena armed with pragmatic tools and enthusiasm. A consequence was a multiplicity of studies using freshly devised instruments which thereby led to a lack of commonality and generalizability across studies. While much of the work was descriptive, a more or less hidden curriculum of ideological commitment did at times substitute for conceptual clarity and theoretical coherence.

There were also a number of strengths in the growth of appreciation of classroom complexities, in a recognition that correlation provides no explanation and in an increasing questioning of procedures and instruments. One valuable outcome of the research in behaviour modification was the realization that a research method and a technology could be demonstrably useful and that statistical sophistication was not a necessary concomitant of good research addressed to significant questions.

Amongst anticipated developments we would suggest the following: first, a continuation of the emerging rapprochement between disciplines and theoretical orientations is likely to lead to interdisciplinary and multilevel research, perhaps using teams. A critical member of many such teams may be the participating teacher colleague. Social psychology, individual psychology, sociology and anthropology are now it seems less bounded by dogma and academic protectionism. The possibilities of convergence and cooperation have been increased markedly as has the possibility of a breakthrough from current conventions to new paradigms.

Second, there are likely to be more studies which attempt to get inside the teacher's frame of reference. Such studies would be concerned with teachers' beliefs, perceptions decision-making processes and conceptions of various subjects. (Clark and Yinger, 1977)

Third, methodological developments are likely to lead to an increase in symbolic interactionist, case study and similar anthropological procedures. The educational psychologist's interest in perception, cognitive processes and human learning may be reoriented to take greater account of social, situational and ecological conditions. This third area in which the social construction of reality may become an important theoretical stance (even a new orthodoxy?) raises questions of relativism, generalizability and validity. Language and context will be critical components in any reporting of such work.

Fourth, a gradual release from narrow views of accountability is likely to encourage a more flexible look at the problem of the criterion of effectiveness. Certainly one may anticipate more open and confident dialogues between teachers and researchers, amongst proponents of different disciplines, across supporters of different methodologies and theoretical perspectives, and amongst the participants in the processes of education and of inquiry.

Fifth, there are already signs, both overseas and in New Zealand, of a growing interest in a number of the variables which have been somewhat neglected in classroom research. The *Science Learning Project* is exploring the student's understanding of certain salient concepts which may affect the learning of equivalent scientific constructs. Student perceptions, students as teachers, and students as analysts of teaching have also recently received increased attention. Time, as a variable, has received more sophisticated analysis as 'academic learning time'[14] or 'opportunity time' in comparison with 'observed time-on-task'. The nature of the learning task has similarly been re-examined. Doyle's view of classroom activities encapsulating teaching objectives, Glaser's focus on the psychology of subjects (c.f., the sociology of knowledge) as well as the distinction between the choice and demand characteristics of learning tasks all contribute to a less simplistic view of life in schools than the earlier research presupposed.

Finally, there are the on-going research questions of criteria, of alternatives and of coherence. The criterion problems of evaluation and accountability tend to be based on assumptions of predictability of outcome, and in turn of a measure of determinism. But is education so predictable? The alternative perspectives, for instance within the discipline of sociology, are exemplified by the debate about what functionalists would call 'the socialisation process' and what conflict theorists would call 'the allocation function', itself related to the concept of legitimation. Different disciplinary orientations, different ideological commitments and different research paradigms make for a lively dialogue and diversity. At the same time the search continues for some way of providing coherence and integration to the wide range of discrete pieces of research. The search is illustrated by debates about the forms theories and models of teaching might take, about the value of meta-analysis (Glass, 1978) as a statistical method of coordinating research findings, and about the potential of a case studies[15] file as basis for future theory and guiding principle. Each of these attempts to bring about order out of diversity suggests another challenging route to new syntheses.

Footnotes

1. Our major source of information for thesis review has been the collection of titles collated by Pickens (1975, 1976a, 1976b, 1979). We have limited ourselves to M.A. and Ph.D research only, recognising that there are an increasing number of diploma investigations worth further review at a future date.
2. There have been over 200 articles published in the *New Zealand Journal of Educational Studies*, of which only 15 were classroom studies.
3. See Chanan and Delamont (1975) for an excellent review of the historical development of classroom research.
4. Among the few outstanding exceptions to this generalization are Smith (1968), Jackson (1968), Kounin (1970) and Barker (1963). Only relatively recently have participant-observation and similar approaches received positive support from the community of classroom researchers, most of whom were trained in the conventions of systematic observation.
5. Even though Flanders' use of 'indirect' appears to echo the reflective technique and the indirect counselling advocated by Rogers (1969), the notions of initiate and respond, solicit, structure and react have clear S-R affiliations. Taba (1966), using a Piagetian cognitive development framework, could not avoid using the learning constructs of generalization and discrimination.

6. Flanders (1964) had a particularly strong influence initially since he developed much of his interaction analysis in New Zealand classrooms while he was on a Fulbright fellowship.

7. An indication of this interdisciplinary approach is the fact that New Zealanders tend to refer to themselves as 'educationalists', allegedly more interested in education than in any single discipline.

8. Other reviews of classroom research include the work by Campbell (1968), Nuthall (1968), Archer (1975) and Freyberg, Haigh and Katterns (1975).

9. The classification into six topic areas is one that emerged as appropriate to the main emphases in the wide range of New Zealand reports which were read over several months. Other groupings (e.g., Egglestone, Galton and Jones, 1975; Doyle, 1977) have been used in reviews of British and American studies. Each is, no doubt, legitimate in its context, and appropriate for the reviewers' purposes.

10. For three groups the 'regular' classroom setting was a special class (Thomas and Adams, 1971; Ellery, Blampied and Black, 1975; Fry and Thomas, 1976).

11. Munro's work has been influenced by the *Ford Teaching Project* at the University of East Anglia (Elliott and Adelman, 1975).

12. The report on the Hillary College Whanau unit (1977a) is an excellent example of his style. He has also written a large number of case studies of individual classrooms during the *Enquiry-Based Teaching* project.

13. Theory may be used to help guide the researcher toward particular aspects of interaction for further focussing or theoretical insights may emerge from the observation. This latter view, often known as grounded theory, has recently been advocated for New Zealand classrooms by Battersby (1979).

14. The *Beginning Teacher Evaluation Study* undertaken by staff of the Far West Laboratory for Educational Research and development has used academic learning time as an important variable. Timing is seen as a factor in determining the effects on learning of such other variables as praise. (e.g., Resnick, 1971).

15. See, for example, the work of scholars at the Centre for Applied Research in Education, University of East Anglia.

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Behaviour Analysis in Educational Settings in New Zealand: Current Research Trends

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State of the art papers can be an important exercise for behaviour analysts. They provide a special opportunity to undertake a fundamental activity, the observation and analysis of repeated measures. With repeated research activities and their outcomes considered as samples of data a rewarding level of induction is possible. For example, results can be obtained such as establishing the generality of concepts, and identification of potentially significant areas for future research.

This paper is divided into three sections. Firstly research areas identified in an earlier review (Glynn, 1976) are updated, with those studies which add significant information to the data base and raise important issues receiving close attention. A second section outlines current directions in research activities which establish new concepts (thereby, in some instances, defining the limits of previous ones). Finally, more general programmes, including innovative special education facilities and remedial programmes are reviewed.

We have adopted Baer, Wolf and Risley's (1968) classic statement on the dimensions of applied behaviour analysis as a basis for selecting research to review. The major concern is not to make a

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critical methodological evaluation of New Zealand research. Rather, we review the procedures and concepts used in, and the outcomes of, available published and unpublished research reports which have adopted a behaviour analytic framework. In so doing methodological issues are noted and where appropriate commented on.

The paper is unashamedly parochial. This position is justified on two counts. There is enough quality research in New Zealand to justify limiting the review to local studies. In addition there are characteristics of the New Zealand educational scene which mean local research may have greater relevance (e.g., approaches to teaching reading).

I Replication and Extension of Previous Research

In an earlier paper five years of applied behavioural research in New Zealand schools were reviewed (Glynn, 1976). Studies were grouped into research on teacher management, peer management and self management. The majority of these studies were concerned with the management of problem behaviour in normal primary and secondary school classrooms using direct intervention procedures.

Research has continued to be productive in these areas. Many of the studies come from special projects and theses required for graduate and professional training courses. The work of Church at the University of Canterbury must be recognised as a significant contribution, not only in training but in editing and publishing through the *Educational Research Newsletter*. Studies of classroom contracts, teacher attention to on and off-task behaviour, self management and other procedures are contained in the Newsletter.

Research has also extended the established principles and procedures into different subject and behaviour management populations, across a greater range of educational settings, and to different behavioural forms. These are important activities when collectively seen in terms of the tactics of scientific research described by Sidman (1960) as establishing the reliability and generality of the data.

Teacher management

Functional relationships between levels of inappropriate classroom behaviour and amount of teacher attention to appropriate behaviour were demonstrated in early studies (e.g., Glynn and Quinnell, 1971; Glynn, 1972). It is therefore important to note recent descriptive data on 'natural' rates of teacher verbal attention to on and off-task behaviour have been published. These were abstracted from baseline observations of 10 teachers in three South Auckland Intermediate schools (Thomas, Presland, Grant and Glynn, 1978). The data show rates of attention were higher to off-task behaviour than on-task behaviour for 9 of the teachers. (Overall rate means were; attention to on-task = 0.20 per minute; attention to off-task = 0.58 per minute. The overall mean of intervals scored on-task was 66 percent.) These rates are similar to those obtained by White (1975) for similar (Grade 7) classrooms in America.

The overall finding of low rates of attention to appropriate behaviour in situations where there is a relatively high rate of problem behaviour has been recently extended to academic tasks. In a pilot study McNaughton, Glynn and Robinson (1980) describe five teachers' interactions with low progress 8 to 12 year old readers during one-to-one oral reading. Over ten sessions the average number of approval comments directed to correct reading responses was four per session compared with close to 75 percent of all errors being attended to (a majority of them immediately).

As Thomas et al. (1978) suggest there is a need for research to identify sources of control over teacher behaviour (e.g., disapproval comments). For example, it is possible that the reinforcement available in short term behaviour change (e.g., corrections of an error following immediate teacher help), even though having possible inappropriate long term outcomes is very powerful. This may be especially so for children with long histories of difficulties and/or making slow progress (c.f. Patterson's 1977 'coercion' hypothesis, and Wahler's 1976 'negative trap' model).

The procedures developed in earlier research on teacher management of classroom behaviour have been extended to other settings and managers. Litter monitors have been trained to remove litter in an intermediate school playground under a group contingency, where a whole class gained access to free time depending on how much litter remained (Presland, 1978). Johnson (1978) successfully trained part-time and full-time staff at a preschool and special care centre for intellectually handicapped children to effectively change their patterns of attention to appropriate and inappropriate social and play behaviour.

A more ambitious study by Starkey and Perkins (1978) involved the entire roll of a primary school in a programme to change street crossing behaviour at intersections. Procedures included an extensive task analysis, modelling of appropriate behaviour and in-class instruction in basic concepts, training of peer supervisors and mastery training of all children (N = 370) on intersections. Special badges were used as consequences for reaching a criterion level of performance. Unfortunately the data indicate a minimal change in the children's appropriate street crossing behaviour. The authors claim this was not due to problems in the basic procedures, but due to insufficient programming for maintenance and generalization.

Fry and Thomas (1976), however, did programme for generalization. They implemented a token economy system (with time out) in an adjustment class to increase the on-task behaviour of behaviourally disordered six-year-olds. Following successful treatment the programme was stopped and the children were placed back in regular classes. The data show successful reintegration occurred for at least six of the seven children. The programming for generalization was not extensive, involving withdrawal of the token programme in the adjustment classroom prior to full placement, approximation of praise and attention for appropriate behaviour to regular classroom levels, and gradual introduction to the normal classrooms.

The trend noted in the earlier (1976) review towards greater use of contingencies on accuracy and academic work completed is now firmly established. Moreover, not only teachers are involved. For example, Fry (1977) used parents at home as tutors for low progress 7-to-11-year-old readers. Parents used praise tokens and tangible reinforcers as consequences, and made and sequenced cards for word recognition training. All 30 children made progress, gaining an average of 8 months in reading age *(Burt Word Reading Test)* for two months of tutoring.

Fry's data agree with other research using parents as home tutors (Robinson, Glynn, McNaughton and Quinn, 1979). She notes that parents from a lower middle class suburban area both showed strong interest and cooperation, and demonstrated ability to tutor their own children. Parents represent a highly motivated group and a potentially significant resource for remedial tutoring.

Two studies (M.A. theses) show why research has moved further toward concerns for variables directly influencing academic performance. In an ex post facto analysis following an unsuccessful attempt to gain control over off-task behaviour, Wernham (1978) found little (correlational) relationship between low noise levels and on task behaviour or academic output. Glendinning (1978) introduced a token procedure for on-task behaviour and then academic performance in an adjustment class for emotionally disturbed children. The multiple baseline across both lessons and behaviours indicates that contingencies for on-task behaviour had little effect on academic output, whereas contingencies placed directly on academic output produced greater output and increased attending behaviour (c.f. Marholin and Steinman, 1977).

Both studies show that the relationship between attending behaviour and academic behaviour is not simply that high levels of the former are needed as a precondition before changes in the latter occur. Given that learning in classrooms is necessary then following instructions is defensible only to the extent that other learning (including academic learning) is made possible (e.g., Peters, 1973).

If academic gains are not determined by prior change in on-task behaviour in some classrooms, and, if contingencies placed on academic behaviour change on-task behaviour anyway, there is an obvious conclusion. Our research efforts should be towards analyses of variables directly related to acquisition of academic skills. Bringing classroom behaviour under the control of academic materials may be both more defensible and better behavioural practice (e.g., Marholin and Steinman, 1977). Thus in some classrooms off-task behaviour might be better viewed as an adaptation entirely appropriate to a poor programme or curriculum. In which case the concern of the behaviour analyst should be curriculum management.

Peer management

Several studies already reviewed involved peers as behaviour managers. Presland's (1978) procedures for increasing litter removal from an intermediate school playground included the use of high school students as supervisors and data collectors. They carried out these activities as part of a community studies course. Presland reports anecdotally that having functioned as supervisors the high school students displayed greater awareness of the litter problem. Peer tutoring and management represent an important area for further research in New Zealand given general findings on effective use and mutual educational benefits for tutor and tutee (e.g., Dineen, Clark and Risley, 1977; Sanders and Glynn, 1977).

While Starkey and Perkins (1978) had not designed effective procedures for producing large scale changes in street crossing behaviour they do suggest that use of peers may provide the basis for more effective procedures. They anticipate using peer tutors to cue and provide feedback for the appropriate behaviours. Thus they see the solution to their problem of programming for maintenance and generalisation as lying with peers.

Self management

In the area of self management Coleman and Blampied (1977) extended the use of standard procedures to a senior special class for nine 9-to-14-year-old retarded boys (IQ range 51 to 76, Wechsler Intelligence Scale). Self-monitoring, self-recording and self-administering check marks exchangeable for back up reinforcers were associated with increased on-task behaviour. While some trends in the data confuse interpretation (e.g., an ascending baseline) the reversal design strongly supports the authors' conclusion that a mild to moderate degree of intellectual handicap is no impediment to the use of standard self management procedures.

Self management procedures successfully produced high levels of on-task behaviour even though an earlier phase of externally determined reinforcement was not used, thus replicating Jackson and Glynn's (1974) findings. As noted in 1976 (Glynn, 1976) there is still a need to examine the variables within classroom and individual interaction histories which might determine the need for externally imposed contingencies prior to a self management procedure.

Another observation from this study concerns the accuracy of self-monitoring and self-recording. During a phase where the monetary value of back-up reinforcers was substantially increased, mean accuracy of self-recording declined (the mean difference between observers' and children's assessments of amount of on-task behaviour was close to 20 percent). The authors then changed the backup contingency from consumption (i.e., possession) of play materials to access to them in free play. The difference in assessment of on-task behaviour by the class and the observer was reduced while high levels of on-task behaviour were maintained. This suggests the selection and programming of back-up consequences may be a critical component for this paradigm.

A feature of the research into teacher management and self management has been the analysis of components of treatment 'packages' or comparison between such 'packages' or variables. Chiew, Parsonson and Priest (1979) analysed the differential effects of components of the 'good behaviour game' on disruptive behaviour of a third form class during English and Mathematics. Rules, rules plus feedback, and rules plus feedback plus consequences were introduced successively in a multiple baseline across lessons. This design, describable as an A - B - B + C - B + C + D design, or sequential components design, has been used in other component analysis research (e.g., Johnson, 1978).

The data indicate that rules alone (B), and rules plus feedback (B + C - marks on the blackboard) exerted little control over disruptive behaviour. As a corollary, with all components introduced successively and in the particular order noted above, disruptive behaviour was dramatically reduced in both lessons.

The problems of sequence or interaction effects in reversal designs (Hersen and Barlow, 1976; Ulman and Sulzer-Azaroff, 1975) are particularly compelling in component analysis research. Hersen and Barlow (1976) claim there is a design requirement that only one variable should be changed when proceeding from one phase to the next and components need to be directly compared with other components in adjacent phases (as in an A - B - A - B - C - B comparison where B is compared directly with A, and C). However, when three or more components need direct comparison in balanced sequence, excessively long and unwieldy single subject designs eventuate. If N = 1 designs are retained then there appear to be at least three alternative strategies. Two of these are either a succession of studies each making only one or two direct comparisons (thereby necessitating comparability across studies), or, groups of subjects run in different combinations within one study (thereby necessitating comparability across subjects; e.g., Sanders, 1978). The third alternative is to adopt a specialised variant of the reversal design where components alternate within phases (see discussion below).

Coleman and Blampied's (1977) self management study used ticks on paper with (B + C), and without (B), back-up reinforcers. Rather than the sequential design of the previous study, this study introduced phases in the pattern $A - B - B + C_1 + B + C_2 - A - B - B + C_3$ (C_1 = consumption reinforcement, C_2 = enhanced consumption reinforcement, C_3 = access reinforcement). Because no two conditions share adjacent phases (e.g., B - B + C - B) it is difficult to make strong comparisons. Nevertheless the data do suggest the increased effectiveness of the procedure when back-up reinforcers are available and the superiority of an 'access' contingency to a 'consumption' contingency.

These analyses raise an applied issue. In its simplest form it is the perennial debate of the distinctions between basic and applied research. Azrin (1977) has argued for a low priority to be given to analytic studies, claiming applied efforts should be outcome oriented. But the concentration on outcomes and the construction of 'treatment' packages from known and effective procedures has recently been criticized as limiting (Deitz, 1978). Deitz's claim is that the complete transition to a technology is premature, it is presumptuous to assume that the most useful information about behavioural interactions in applied settings has already been gained. This argument can be extended. The technology for practitioners ultimately may be weakened because analytic, investigative research was not carried out and further significant variables identified. The issue does not have to be resolved in an either/or fashion (c.f., Baer, 1978). That applied research can be both analytic and outcome oriented has been adequately demonstrated by several researchers, including for example Risley (Risley, 1977) and Lovitt (Lovitt, 1976).

Another issue arises from direct comparisons between different variables or treatment packages. While such comparative research is often requested, caution is required. To obtain unambiguous results it is usually necessary to have extensive knowledge of the operating characteristics of variables or treatment packages (Sidman, 1960). This means data are needed on their operation under different conditions and for different values of the dimensions involved. Without this information comparisons are uninterpretable because they may not adequately represent the power of either or both 'packages'/ variables.

Given this caution it is interesting to note a comparison that Brown, Parsonson, Priest and Glynn (1979) made between two differential reinforcement of low rate schedules (spaced responding DRL and Interval DRL). These schedules were applied to the disruptive classroom behaviour of two 8-year-old boys. Response patterns characteristic of those obtained in laboratory operant studies did not occur. However the multiple baseline did suggest that the schedules controlled the disruptive behaviour.

McNaughton and Delquadri (1978) compared modelling procedures (e.g., 'the word is...') with a prompting procedure (e.g., 'What is the first sound?') for teacher correction of errors during oral reading. The comparison was designed so that a more proficient learning disabled 11-year-old received the two procedures in the opposite order from a less proficient peer. Conclusions concerning differential effects as a function of inter-individual difference are representative statements and need group (actuarial) data. Nevertheless the difference between the two subjects, namely that modelling was more effective for the less proficient and prompting was more effective for the more proficient reader, warrants further research.

A feature of this study was the use of short term reversals between longer phases of the two procedures in order to reduce carry over effects or contrast effects. The design could be represented as S_1 : A - B - A - C - A - B S_2 : A - C - A - B - A - C (where A = no oral reading tutoring, B = prompting and C = modelling). The design contravenes Hersen and Barlow's (1976) strict requirement for direct comparisons from adjacent phases, but may represent a useful defensible exception where phases placed in adjacent positions are likely to be interactive.

II Research trends and emergent concepts

Further delineation of concepts, and shifts in research emphases are apparent in the literature. The studies which show these developments exemplify the strength of behaviour analysis. The methodological and conceptual approach of behaviour analysis emphasizes idiophenomena in applied settings and induction from replications of the patterns found in repeated measures. This produces a particularly sensitive framework for conducting research. It involves a process of scientific development analogous to the Piagetian concepts of assimilation and accommodation; (see Piaget, 1978 for his description of these processes at work in scientific endeavours).

The development of the framework can be seen in the four areas of (1) research into learning processes; (2) elaboration of concepts of complex behaviour and curriculum programming; (3) research into the training of professional and para-professional educators; and, (4) technological advances in observational and analysis procedures.

Research into processes of behavioural change

Further identification and conceptualization of variables influencing behavioural change in educational settings continues. Contributing to shifts in our understanding is research which has examined (1) ecological variables and setting events, (2) error correction learning, and, (3) generalization.

The need for applied behaviour analysis to actively research ecological variables has been succinctly stated by Risley (e.g., Risley, 1977; Krantz and Risley, 1977). He claims applied problems can be extended to involve behavioural 'ecosystems' (such as whole schools, institutions etc.). Risley is confident that behaviour analysts can discover general principles of the organization of living environments for dependent populations.

Risley's work in preschool settings also demonstrates that manipulation of ecological variables such as seating arrangements, sequencing of activities, and, naturally occurring adult-child interactions (incidental teaching settings) produce behaviour change which is effective and as efficient as standard behaviour modification procedures. But in addition, such manipulations do not require large expenditures of resources (e.g., teacher training) or the extra response cost to teachers that may occur when individual contingency management procedures are used. A particularly powerful example is the incidental teaching setting where significant and generalised oral language gains have occurred.

In New Zealand O'Rourke and Glynn (1978) have studied ecological variables in an intermediate school playground. Extensive data were gathered on the effects of types of playground equipment and adult participation with equipment on appropriate and inappropriate playground behaviour. Provision of equipment and periodic changes in equipment increased and maintained children's appropriate participation. But adult presence and participation with equipment produced high stable rates of participation irrespective of equipment changes and type of equipment. In conclusion the authors again note the effectiveness of indirect modification of environments. The manipulation of ecological variables reduced undesirable playground behaviour by generating high rates of incompatible (i.e., appropriate) behaviour.

Classroom or instructional setting events are specific examples of effective ecological variables. A setting event:

> influences an interactional sequence by altering the strengths and characteristics of the particular stimulus and response functions involved in an interaction
>
> (Bijou and Baer, 1978, 26)

As defined, the concept emphasises the influences exerted by an individual's history of interactions as well as physical, biological and social factors in the general context. Setting events are therefore variables that function to increase the effectiveness of 'naturally' occurring (i.e., currently established) interactions. They also include variables which could influence the probability of a behaviour occurring without directly modifying specific stimulus and response functions. Thus, given appropriate interactions occurring with some minimal frequency, and that a (functional) setting event can be identified, then direct intervention may not be necessary to increase the frequency of a targeted behaviour. This reduces the programming necessary for generalization, maintenance and instructional independence. These needs often arise from direct intervention procedures.

Much of Risley's work in the management of environments (e.g., Krantz and Risley, 1977) is understandable in these terms. The utility of identifying such events is further illustrated in reading instruction research by McNaughton and Glynn (1979), and, McNaughton and Delquadri (1978).

In the former study a simple manipulation of the timing of a tutor's attention to oral reading errors provided opportunities for self correction to occur (by delaying error correction until the end of a sentence). All 6 of the six-year-old normal readers increased frequencies of self correction. The increased opportunity enhanced the power of variables contained within the text to cue behaviours of self correction. Similarly, in the latter study, an extra 10 minutes of practice alone produced increases in oral reading behaviours for two learning disabled 11-year-olds.

Not all events which might logically be setting events necessarily have that function (e.g. noise level, Wernham, 1978; 'attending behaviour', Glendenning, 1978). Setting events are seen as acting on stimulus-response interactions. When funtional stimuli associated with the setting events are not present, or when behavioural competencies are restricted, the potential setting event has no function. Thus noise level or 'attending' behaviour as candidates for setting events for academic behaviour depend on other antecedent and consequent stimuli such as appropriate instructional material and teacher behaviour.

Further research is needed which identifies strong and generally functional setting events, the conditions which lead to an event having such a function, and the way setting events can be utilized in classroom programmes. Conditions conducive to indirect forms of behavioural change need to be distinguished from settings where direct intervention (e.g., Direct Instruction, Becker and Engelmann, 1978) is necessary.

There may be some settings where direct forms of instruction may interfere in the long term acquisition of proficiency. Self regulation of academic tasks (see discussion below) or incidental learning of oral language (e.g., Risley, 1977) may be two such areas. With some subjects in some settings close specification and training in component skills may reduce the flexibility and generativeness of the learning. Stokes and Baer's (1977) technique of training for generalization termed 'train loosely' provides a parallel. And, as Ryan (1979) notes, there are data to show similar processes at work when behaviour modification is used in the regular classroom. Inappropriate consequences of restriction in the range of behaviour emitted and the undermining of 'intrinsic' reinforcement can occur.

Aspects of curricula could be analysed as setting events. Comments in some research on classroom on-task or academic behaviour descrive high or low data points which are at variance with trends. These are often attributable to a new feature of the teacher's programme. Rather than treating these as error variance perhaps these sources of variability should become crucial areas for analysis. There are examples of this sort of research on academic learning in research outside New Zealand (e.g., Whitehurst, Domash and DiGennaro, 1976; Lovitt, 1976; Hanson and Eaton, 1978).

Another area of research concerns error correction in complex tasks such as oral reading. There has been a tendency in the research literature to consider attention to inappropriate behaviour (via error correction) as something to be avoided. While teacher social attention to off-task behaviour has often been shown to have reinforcing properties such may not be the case with complex tasks like reading.

Unintended reinforcing outcomes of error correction have been shown on complex tasks (e.g., Sajwaj and Knight, 1971). But there are both compelling conceptual arguments and some data to suggest error correction (a more general term commensurate with other research areas might be negative feedback) may have an important instructional role. Many academic tasks involve learning to selectively attend to several cues. In more complex tasks these cues provide different sorts of information depending on the combinations of cues present. For example, graphic, syntactic and semantic cues in a reading text.

With these tasks error correction may provide information which enables the student to acquire the skills efficiently and economically. More so perhaps than simply concentrating on scheduling component tasks so that errors are reduced to a minimum and positive consequences are the dominant instructional strategy.

Certainly, considerable academic learning can come from error correction even when there are minimal positive consequences (McNaughton and Delquadri, 1978). This area promises to be an important one for classroom instruction on academic tasks. In the wider literature researchers are beginning to analyse parameters of error correction (e.g., Hanson and Eaton, 1978).

Questions of generalization across settings, tasks (responses) and time have been raised in several studies. Defining criteria for generalization is itself an issue (Robinson and Swanton, 1978) but a working description for our purposes here would be, change in behaviour primarily as a function of behavioural change in a different setting, task or at an earlier time. At least two questions are identifiable in the research. What are the interactional processes associated with all three types of generalization, and, what are the features of tasks and repertoires which determine response classes (i.e., responses that covary such that contingencies applied to one, effect the others)?

These questions have considerable educational importance. For example, generalization is a central issue facing research on parent training (Glynn, McNaughton, Robinson and Quinn, 1980); teacher training

(Robinson and Swanton, 1978); academic learning (McNaughton, Glynn, Robinson and Quinn, 1979) and problem solving (Parsonson, 1978).

In a series of studies Parsonson has been analyzing generalization across academic-related skills. In 1978 Parsonson (1978) reported that studies to date on problem solving and other creative behaviour (e.g., writing) represents beginnings of a research enterprise, but much remains to be done. He emphasised generalization across topographically similar and dissimilar tasks as an area needing further research.

In further generalization research moderately retarded adolescents have been trained to discriminate and label the numbers 0 to 99 (Young and Parsonson, 1979). Modelling and token reinforcement procedures used with exemplars produced generalization to untrained numerals. However, there were marked differences across subjects in the number of training sessions necessary and the rapidity of the emergence of generative labelling.

Similarly, Dawson-Wheeler and Parsonson (1979) taught several reading skills to a 10-year-old 'aphasic' child. They used discrimination training with correction procedures involving modelling, prompting and imitation and descriptive praise. Generalization to untrained reading and writing responses was continually probed within a multiple baseline design. Generalization was obtained from trained reading words, phonemes/digraphs, and, sentences, to their written form. But generalization within reading responses to untrained blends and untrained words occurred only after the boy was taught a related set of phonemes and digraphs and not when a set of sight words were trained. This result highlights the questions introduced above, in this case about component skills in reading (sight vocabulary) which are generative and the most appropriate training sequence to produce them.

This question was present in the Mangere Home and School Project where parents were trained to tutor their low progress normal 8-to-12-year-old readers in oral reading at home (McNaughton, Glynn, Robinson and Quinn, 1979). Reading behaviours were tutored at home and generalization to independent reading at school was continually measured. Home tutoring emphasised proficiency in reading meaningful texts (rather than, for example, word recognition c.f., Fry, 1977). Proficiency included accuracy and self correction measures.

While considerable progress across book levels was made at home during tutoring only 2 of the 8 children showed similar changes in reading at school. It seems that generalization was limited to children who were receiving some individualized programmes in their classroom and who had shown the most proficiency (especially in maintenance of self correction) at home.

Concepts of complex behaviour and curriculum development

Studies have added further dimensions to the self management procedures established in research reviewed earlier. One area of concern has been the direct training of skills involved in self management (or more comprehensively self regulation) on academic tasks. Previous research has primarily been concerned with the maintenance and increase of simple (i.e., easily discriminable) appropriate behaviours. Procedures for self monitoring and self administering reinforcement have been relatively obvious, with external support such as intermittent cues and cards for tokens being used. Procedures have tended to emphasize motivational functions of self management.

When self regulation of academic tasks is considered it becomes obvious that procedures for motivation are only one (perhaps secondary) concern. Firstly, on all but the simplest of academic tasks self regulation is dependent on more extensive discrimination learning. That is, as tasks become more complex (as in academic learning), distinctions between appropriate and inappropriate behaviour become more relative and determined by several cues. Appropriate behaviour does not stand in an easy reciprocal relationship with inappropriate behaviour nor is it a clearly circumscribed class of readily identified responses. Solving a mathematics problem or observing and correcting an oral reading error show these complexities.

Similarly, simple maintenance of levels of output as a goal is overshadowed by the possibility of self instruction. It is likely that skills can be identified which not only maintain current levels of proficiency under appropriate conditions but also contribute to the acquisition of new skills. Thus the components of self monitoring, and further components of problem solving become critical. Skills for identifying errors, difficulties or potential problems, strategies for searching and trying out solutions, and skills for recognising best solutions are needed (e.g., Resnick and Ford, 1978).

These difficulties were confronted by Wilson (1978) in attempting to increase independent sentence writing behaviour by eight mildly retarded children in a special class. Within an ongoing token programme, procedures to increase self-selecting and self-locating words were introduced in a sequential components design. Only when all the components of rules and word lists, praise for self-selection and location, and a response cost for teacher-dependent responding were present, did high rates of target self regulatory behaviour occur. The data indicate that externally mediated procedures which included motivational components were necessary to reduce teacher dependency.

A feature of Cameron and Robinson's (1978) treatment of three 7-and-8-year-old hyperactive children involved training self instruction skills (gaining control over motor movement via verbalization about planning and checking) and self management (self monitoring and self reinforcing) for maths problems. Accuracy increased for all subjects as a consequence of the training and there were indications of possible generalization to untrained behaviours of self correction in oral reading.

Both these studies assumed a direct training paradigm for acquisition of self monitoring and problem solving skills. The remedial research which has concentrated on descriptive praise for self corrections in oral reading can also be seen from this perspective (e.g., Glynn, McNaughton, Robinson and Quinn, 1979). However conditions may be able to be identified which support indirect forms of instruction. For example, children making normal reading progress in New Zealand classrooms develop self correction skills and show changes in the topography of these skills over time, without direct instruction (e.g., Clay, 1979). Given the opportunity and meaningful texts at a suitable level of difficulty, self correction behaviours are high probability behaviours for average progress children with no external cueing or consequences (McNaughton and Glynn, 1979). But as suggested previously, direct instruction may be a necessity when incidental learning does not occur.

An implicit question in much of the discussion thus far concerns how complex behaviours such as oral language and academic skills are conceptualized; both as fully acquired response systems and during acquisition. The issues within this formidable question revolve around the relationship between logical task analyses and empirically determined acquisition sequences under various instructional milieux. A dominant influence in behavioural research has been models of complex skill learning which concentrate on the successive and orderly acquisition of units of skills (e.g., Becker and Engelmann's (1978) analysis of language and reading). Other models which are entirely amenable to a behavioral analysis are possible, including concurrent and mutually interactive learning of several skills. This appears to be a characteristic of how New Zealand children learn to read (e.g., Clay, 1979). (It is interesting to note Panyan and Hall, 1978, recently produced favourable comparisons of concurrent skill learning with serial sequencing of academic tasks.)

Continuing this line or argument further, there is a case to be made for descriptive research of the types of learning possible, and strategies different children use in learning different tasks under different instructional systems. Resnick and Ford (1978) term this research empirical analyses of specific tasks, and argue that it adds considerable information, qualifies logical task analyses, and enables the construction of more effective instruction. Risley (e.g. Risley, 1977) has made a similar argument for developing ecological procedures from descriptions of 'naturally' occurring adult-child interactions.

As a final point, we reiterate comments made in the earlier (1976) review:

> The technology of behaviour analysis has a special contribution to make in the field of curriculum development and evaluation... It is important that persons with skills in the analysis and modification of human behaviour and those with skills in the development of curriculum methods and materials should begin to collaborate instead of working in splendid isolation.
>
> (Glynn, 1976, p.92 ff.)

Behaviour analysis has both a technological and analytic contribution to make to research in this area, as well as a data base on teacher behaviour management for the construction of effective curricula.

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Research into the training of professional and paraprofessional educators
Procedures for training teachers, parents and other resource personnel in behaviour modification and behaviour analysis techniques have been examined in a number of studies. In a standard sequential components design Johnson (1978) compared theoretical lessons, theoretical lessons plus practice in analysis and contingency management, and theoretical lessons plus practice plus feedback about staff and child behaviour. The greatest change in teacher behaviour occurred with the combination of all three components (introduced in the particular sequence described above).

Robinson and Swanton (1978) note that there are few follow-up studies on the generalization of teacher training that fulfil basic methodological requirements (e.g., several data points and reliability measures for the follow up data). In a follow-up one to two years after training in classroom management procedures Robinson, Swanton and Raethel (1979) observed that two of four intermediate school teachers showed generalization across students, lessons and time. Clear differences between the two groups of teachers' attitudes were revealed by interview and questionnaire data. The authors tentatively conclude that selected attitudinal variables may discriminate between teachers who achieve generalized behaviour change and those who do not. If this finding holds up with replication then there are important implications, both for the assessment of generalization and for the training of teachers.

Procedures for producing short term generalization were used in the Mangere Home and School Project in training parents in the use of tutoring techniques for oral reading with low progress 8-to-12-year-olds (Glynn, McNaughton, Robinson and Quinn, 1980). Instructions were provided in the form of 'should' statements (e.g., 'I should pause before correcting an error'). Tutors were trained individually by trainers in a tutoring session. The trainers cued recall of statements before tutoring, recall of tutoring performance after tutoring had occurred, and, provided feedback on the match between statements and performance. With additional early modelling of techniques and weekly feedback sessions parents learned the tutoring skills and successfully produced them on occasions when trainers were not present.

Technological advances

Many of the issues which have contributed to advances in designing research have been outlined in previous sections. The two major areas of development are in designs which handle measures of generalization, and designs which allow for analyses and comparisons of components of 'packages', curricula etc.

In the former case multiple baseline designs with different types of probe measures are emerging as useful designs (e.g., Dawson-Wheeler and Parsonson, 1979; Parsonson and Baer, 1979). Recently a systematic description and evaluation of one variant, the multiple probe-technique has been published (Horner and Baer, 1978). These designs are needed, given shifts towards analyses of more complex behaviour where response class boundaries and precurrent behaviours need to be identified.

Possible approaches in the second area, that of component analysis, have been discussed earlier. A group of designs which seem particularly useful for classroom settings are those variously labelled, multi-element baseline design (Ulman and Sulzer-Azaroff, 1975), multiple schedule and concurrent schedule design (Hersen and Barlow, 1976), simultaneous treatment design (Kazdin, 1978), and, alternating conditions design (Church, 1976). The common element in these designs is the systematic and counterbalanced variation of procedures or stimulus conditions within a phase. The differences between these designs are basically in the timing of the alternation of conditions (e.g., within or across days) and the patterning and consistency over time of stimulus conditions.

Observation and analysis procedures are also showing further development. The complexities of defining and observing play behaviour in preschool children have been discussed by Ballard (1979). The need to record the content of verbal interactions in some settings will necessitate the use of procedures for taking verbatim samples, continuous recording, or use of sophisticated recording apparatus such as transmitter microphones and time set tape recorders. The whole area of analysis of interactional data poses considerable problems for the behaviour analyst although there are some beginnings (e.g., Gewirtz and Boyd, 1976; Patterson, 1977).

The analysis of time series data generally, and the use of statistical procedures is a topic of considerable debate (e.g., Jones, Vaught and Weinrott, 1977). In a local unpublished paper Arvidson (1977) examined approaches to time series analysis, specifically discussing the issues of serial dependency and other problems facing researchers using ANOVA techniques. He suggests where appropriate the use of regression lines to determine trend and, for statistical comparisons with t tests between phases, using a mean projected from the regression line rather than the obtained mean. These suggestions have been used in two theses (Cameron, 1978; McNaughton, 1978).

III General Research and Treatment Programmes

There are several examples of larger scale intervention programmes which have specifically been designed with research as well as treatment components. The feature of direct and continuing participation in educational settings produces problems of guarding both research and treatment/service responsibilities, and vulnerability to variables that are outside the control of the researchers. Because of this they are valuable sources of information on processes in applied settings. Such programmes should generate more useful behavioural data than the piecemeal approach which has often been restricted to a few university based researchers (Church, 1975). This possibility arises out of the continuing dialogue between research and treatment issues within the setting.

The Mangere Guidance Unit (Thomas and Glynn, 1976) was set up as a systematic integrated behaviour analysis approach to handling behaviour and learning problems. It operates with cooperation between trained teachers, Education Department Psychologists, University Researchers and three Intermediate schools in Mangere. Children are referred by Psychological Services. The Unit carries out treatments in classrooms or settings where the problem behaviour occurs, carries out teacher training, and involves parents in treatment procedures where possible.

The Unit has produced several research reports (Thomas, Pohl, Presland and Glynn, 1977; Thomas, Presland, Grant and Glynn, 1978; Glynn, Thomas and Wotherspoon, 1978), as well as a comprehensive evaluation report to the Director-General of Education (Thomas and Glynn, 1976). The procedures which have been developed at the Unit represent an important ongoing resource.

For example, other psychological services offices and schools have moved towards the concept of a guidance or learning unit (e.g., Glen Eden Psychological Services Learning Unit).

However, experiences with the Unit have highlighted the difficulties in implementing behavioural technology at a school level, rather than at an individual class level. As one of us wrote in 1978:

> There remains a large range of political, administrative and communication problems to be solved before behavioural research in New Zealand could claim to be successful at the school level. These problems include the maintenance of regular commitment by Principals and Administrators, (rather than simply initial approval of a research project), coping with the continued and unpredicted staff changes including principals and deputy principals throughout a longer term research, with the resulting vacillation in support for the project. If we are to meet Risley's challenge for behaviour intervention in wider ecological systems (Risley, 1977) then clearly two approaches are possible. The first involves intervention in settings where political support is optimal, so that implementation of behavioural procedures is under the direct control of the researchers. The second approach, that adopted by the Mangere Guidance Unit, involves intervention in settings where political support is more difficult, where implementation of behavioural procedures requires successful enlisting of support from principals and senior staff, hopefully as a result of demonstrated effectiveness of some procedures. The second approach, while potentially more convincing to other teachers and administrators presents a major challenge to behavioural researchers. We have found this situation to be severely punishing for psychologists, subjected to frequent criticism and from senior and junior staff not directly involved with specific programmes in a school. This situation may be overcome only by a heavy commitment to public relations and communication with a school, through participation in regular staff meetings, and being available in the school for individual staff contact. Access to such channels of communication demand the continued goodwill and support of principals and senior staff - difficult in situations where staff turnover is rapid.
>
> My belief is that in the long run there may be a better return from adopting the first approach - that of the behavioural researcher demonstrating what can be achieved in a school setting with optimum political support, with the political support specified as a necessary component of the intervention procedure.
>
> (Glynn, 1978, pp.161-162)

Another, more exploratory project arose out of recommendations in Thomas and Glynn's (1976) evaluation of the Mangere Guidance Unit for greater use of parents. The Mangere Home and School Project was set up to investigate whether parents of low progress 8-to-12-year-old readers could be trained to successfully tutor their children at home.

It was a project funded as a piece of research for a limited time period. Nevertheless, it has lead to a series of training films, shown on National Television, which have become publicly available as an edited training film (NZCER, 1979) and an accompanying instructional booklet (Glynn, McNaughton, Robinson and Quinn, 1979).

These dissemination outcomes are based on behavioural analysis research carried out during 1978. A research monograph is currently in preparation following the analyses of follow-up measures taken after a year. Several working papers have been presented in the intervening period (Glynn, McNaughton, Robinson and Quinn, 1980; McNaughton, Glynn, Robinson and Quinn, 1979) plus a brief outcome article oriented to teaching personnel (Robinson, Glynn, McNaughton and Quinn, 1979).

The project has produced important data on training parents, effectiveness of parent tutoring at home, generalization of academic behaviour gains across settings, and, the design and refinement of procedures for both tutoring and the observation and analysis of tutored reading.

The purpose of identifying and describing the project is to (somewhat personally) illustrate a claim made by Risley (1978) that significant research is no longer done by individuals and collaboration is needed if the full extent of an applied problem is going to be tackled. There are three dimensions to this need for team research. Applied problems are complex and unwieldy needing considerable input of research expertise over time. Full solution or at least movement towards firm conclusions demand analysis at several levels. For example Clark, Green, Macrae, McNees, Davis and Risley (1977) describe a research programme starting with descriptive data on the extent of problem and degree of interest in problem solution, through programme and component analyses, to marketing research to determine and evaluate the dissemination procedure, resultant effectiveness and consumer satisfaction. A less comprehensive but similar approach was made possible by the team of four researchers working on the Mangere Home and School Project.

Applied problems also make multifaceted conceptual and methodological demands on researchers. The cross fertilization, and testing and revision of approaches available in a team approach proved invaluable in conducting the parent tutoring research.

Finally, a team approach to research increases the probability of an ongoing generative programme of research being produced. The comment that Church (1975) has made, which was reiterated by Risley (1978), is that research has tended to be piecemeal and isolated. The identification and definition of issues, extension and elaboration of concepts, and improvement and advances in methodology are very difficult to achieve outside of an integrated programme of research. Again, the Mangere Home and School Project is a very limited example of the alternative, arising as it did out of previous behavioural research. It has provided a basis and impetus for further research such that each member of that team is conducting further research as a consequence of experience and data from the project.

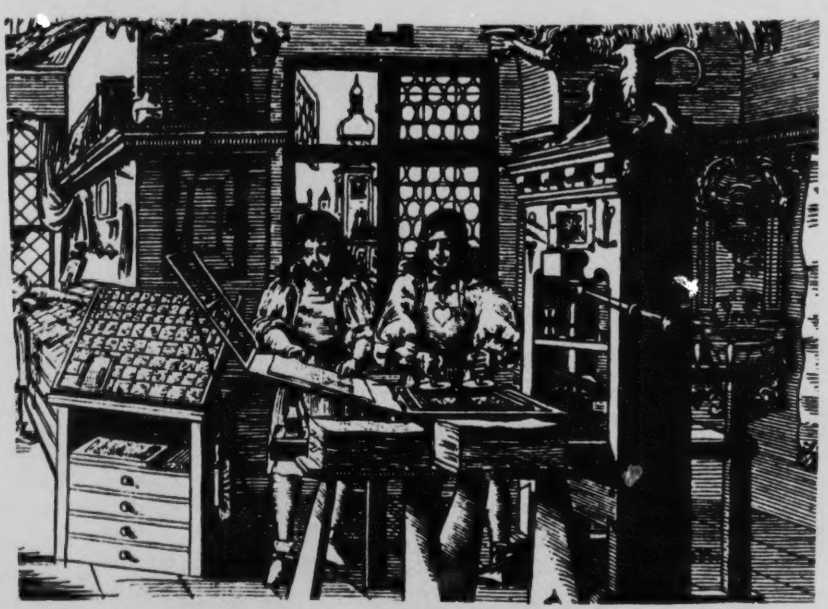
Summary and Concluding Comments

The cumulative effects of close to ten years of applied behaviour analysis research on educational practice is impressive. Contributions have been made to classroom management, and instruction in normal and special education settings across a large range of ages and skills. The effectiveness of procedures continues to be researched and extended to different behaviour modifiers, different target populations, different behaviours and different settings.

Thus the title of this paper which refers to educational *settings* reflects part of the growth and demonstrated significance of applied behaviour analysis. But the framework of behaviour analysis is also advancing. Issues and concepts in diverse areas such as behaviour change variables, complex behaviour and curriculum programming, professional training and methodology show the field continues to grow and undergo changes.

This review has only covered a small area within the purview of behaviour analysis and has been selective and restrictive in the research reviewed. For example, research in the Psychology Departments at the University of Canterbury and University of Auckland is producing information on a range of special education training procedures (e.g., oral language training with retarded children, Leo, 1978; Miller, 1977; Williams, 1978). Additionally there are important implications in much of the research reviewed which demand further discussion (e.g., issues of graduate training and research funding).

One major area is that of the setting up of programmes of research. This paper commenced with optimism, excited by the possibilities of making connections across studies which might produce grand generalisations. While this serves a useful purpose there is an obvious need for integrated programmes of research which make continuing and significant contributions to the field.



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Reading Research in New Zealand

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There were only about 40 research studies in reading carried out in New Zealand during the last decade. Many of them were limited in scope, either because they were constrained by dissertation requirements, had limiting funding, or because too much was required in too little time.

Some of the research, however, has gained international recognition. Marie Clay, for example, at the University of Auckland, has received two major international awards for her work on early reading.

Yet although New Zealand reading research is somewhat uneven, there are some important ideas represented within it which should be reviewed. I propose to do this by dividing the various research efforts into six categories: Children and Texts; Teachers, Children and Texts; Language, Culture and Reading; Intervention; Field Research and Evaluation; and Survey Testing/Test Development. (I will not discuss all the research studies carried out during the 1970s but they are all listed in Table 1 and included in the references). Having covered the research in this way, I would then like to discuss what seem to me to be the gaps in our research knowledge, and the questions that still need to be answered.

Children and Texts

A lot of reading research in the 1970's was focussed on the issue of how children learn from texts. The impetus for much of the activity came from the research of Marie Clay. In terms of research and theory, her results suggested that children can and do teach themselves to read - that they actually learn from their mistakes:

> If we could train children to learn from their difficulties, then they would improve in skill every time that reading took place. (Williams and Clay, 1973).

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Table 1: A Profile of Reading Research in the 1970's in New Zealand

	Age range						
Fields of Research	4 years (preschool)	5-6 years (junior)	7-8 years (middle)	9-10 years (upper)	11-12 years (intermediate)	13 + years (secondary)	(adult)
1. Children and Texts	Barney 1976	Clay 1972a, 1979a Ng 1979	Robinson 1973 Pine 1977 Williams and Clay 1973 Clay and Imlach 1971 Nicholson 1977 Elley 1976 Carter 1976	Hill 1979 Hoare 1980	Murphy 1975	Boyd 1970 Watson 1973 Hoare 1980	
2. Teachers, Children and Texts		Kitchen 1976 Ng 1979	Beardsley and Nuttall (in progress) → Harper & Graham 1974	→	→		
3. Language, Culture and Reading		Clay 1970		Hill 1979			
4. Intervention	Ritchie 1978	Hughes 1972 Clay 1972b, 1979b		Fry 1973 MacKay 1976 Wheeler 1979	McNaughton 1978 Robinson et al. 1979	Harrison 1979	
5. Field Research and Evaluation		Slane 1976 Ward 1976 Nicholson 1979 → Fortune et al. 1979 →	→ →	→			
6. Survey Testing/Test Development			NZCER, 1971 Reid & Hughes 1974 Hughes and Reid 1979 Hattie 1979 Renwick 1978		Walsh (in progress)	Reid, Croft and Jackson 1979	

In her earlier research, she had found that children often corrected their errors while reading, and that their corrections made sense - that is, the children were trying to learn to read by using their own background knowledge, as well as the predictability of the sentence patterns in the stories, to make informed guesses about words. Once children knew the likely meaning of a word, they often only needed to process the first one or two letters of the print in order to identify it. What this meant for teaching was that children could be given texts right from the beginning of their school experience, as long as they were reading text material which was familiar to them (Clay 1972a, revised 1979a).

Clay was also interested in the early detection of reading difficulties. As part of her research, she developed a number of diagnostic checkpoints, and corresponding normative data, so that teachers could monitor children's progress. In this way, if it was found that some children were not teaching themselves to read, then the teacher could intervene to help.

In 1976, Clay began a study called *Reading Recovery Project* which was designed to give this help. It was aimed at assisting children who had not made adequate progress in reading after having had one year at school. I will discuss this project in more detail later in the paper.

There were a number of studies, mainly by Clay's students, which continued and extended the research she had begun (Robinson, 1973; Williams, 1973; Watson, 1973; Imlach, 1976; Pine, 1977; Ng, 1979). In general, these studies tended to support the notion that reading was a matter of making sense of texts - that children anticipated words while reading and sampled letters in words in order to confirm their predictions.

Phonics was dealt quite a blow by this research, especially the notion of teaching phonics in isolation from the text itself. Unfortunately, no researcher took up the challenge on behalf of phonics and other word attack techniques. No one even followed up on Simpson's 1962 suggestion, in the Departmental handbook on reading for infant classes, that phonics could be taught incidentally, so that children would have a back-up word attack technique.

Another of Clay's students, Ng (1979) found that proficient readers, in their second year of school, did indeed have some kind of back-up strategy for working out words, which they used when story context was insufficiently helpful. Ng found that the best of the six year old readers were flexible in their approach - that they could switch from 'reading for sense' to 'reading the words', depending on the difficulty of the text.

Hill (1979), in a different kind of study, with older children (8 year olds), tried to find out what the limits were in terms of word recognition when children had just the overall story context or else just the initial letters of words to help them. He found that content words (such as nouns) were easier for children to determine when all the letter cues were available to them. He found that this was especially the case when texts were difficult. He argued that children do not need to use all the letters in words all the time, but that they do need to use all the letters some of the time.

Hill also found that oral reading ability was not a very useful indicator of reading comprehension for older children. He found that these children were often able to answer questions about stories which were difficult to read orally.

Text difficulty is clearly an important factor in learning to read. What is it, then that makes texts difficult for children to understand?

Elley (1969, 1976) argued that vocabulary knowledge was a key factor in determining text difficulty. His own research had shown that a readability formula based on 'noun frequency' (that is, the frequency of occurrence of nouns in texts), was a powerful predictor of text difficulty. He used this formula to grade the passages used in the *Progressive Achievement Tests,* (New Zealand Council for Educational Research, 1971).

What Elley did not explain, however, was the fact that children often find texts difficult, even when the vocabulary is well known to them. Rob Imlach and I (Nicholson, 1977, Nicholson and Imlach, 1979) studied the difficulties that 8 year old children had in answering questions about narrative stories. We found that some stories were more difficult than others, even though the vocabulary used was well known to the children.

What we found interesting in our study was that children often paid more attention to text information when the stories were difficult. When the stories were familiar to them, they paid less attention to text details and relied on their prior knowledge instead.

We argued that text difficulty depends partly on what children are asked to do. Sometimes children can get the 'gist' of a story, but are unable to recall, or do not understand, the text details. Text difficulty also seems to depend on the structure of the text, especially the way in which complex ideas and concepts are explicated within the text itself.

Hoare (1980) took a close look at this issue of text structure. She found that, when she made texts more explicit, they were rated as more difficult according to readability formulas. They were more difficult partly because she linked up ideas in the text with a logical connective ('because') and partly because she included difficult concepts rather than replacing them with easier synonyms. The difference was that she explained the concepts in the text. The addition of the explanation made the readability estimates jump even higher. What she found, though, was that children found the supposedly more difficult text in fact easier to understand. The more unfamiliar the topic, the more they relied on and benefited from the explication within the text.

These results fit in with the research we did on question-answering. The point is that children can only answer their own questions or the teacher's questions by using the following strategies: either they use their own background knowledge or they use text information, or they use both. It seems to us that they get the best answers when they use both strategies, using the rule that the text information usually gets priority over our own assumptions about why things happen or what concepts really mean.

Overall, the research on reading comprehension fit rather nicely into the knowledge base that we have established on early reading development. It seems that children also can teach themselves how to comprehend, but that this involves having sufficient information in texts for them to be able to make sense of the material they are given.

When put in perspective, the New Zealand research on children and texts suggests strongly that children can and do teach themselves to read -

but their ability to help themselves will depend on the reading materials we design for them. The *Ready to Read*[1] series was originally designed by the Department of Education to make this kind of learning happen. Now that the series is under revision, it might be wise to check to see if this objective can still be achieved. Perhaps a similar exercise is necessary for expository texts, particularly in the intermediate and secondary schools. I doubt whether we will help older children if we write texts for them in simple language. What they really want are texts which will help them to confront complexity - not avoid it.

The research on children and texts also warns us that we need to be able to monitor and analyse children's progress in self-teaching. Global scores such as provided by Progressive Achievement Tests and teacher rating scales are totally inappropriate for such a purpose. I would argue that we need to make much more systematic use of such techniques as 'running records' (Clay, 1979a) and question-answer analysis (Nicholson, 1979).

Teacher, Children and Texts

This category needs some explanation. It seemed to me that it would be useful to distinguish between what happens between a child and a text, and what happens when the teacher is involved. From the teacher's point of view, the problem is not simply a child and a text - it is more likely to be 35 children and many more texts. Teaching involves planning for large numbers of children so that they can all learn effectively. From the child's point of view, learning is partly determined by the teacher and partly self-determined. In other words, this category encompasses the classroom learning environment, and it can be summed up in a single word - complexity.

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[1] The *Ready to Read* series was first issued by the Department of Education in the early 1960's. It was a series of beginning reading texts, consisting of 12 'little' books, and 6 'big' books. The series was graded in difficulty and included both 'basic' (very frequently occurring) vocabulary, such as *the*, *and*, *was*, as well as 'interest' vocabulary, such as *Viscount*, *airport*, etc. There was no emphasis on phonically regular words of the 'fat cat sat on the mat' type - instead, the emphasis was on 'natural' sentence patterns, which would enable children to 'predict' the words in the text. As a result, children would make errors of the kind 'Peter said' when the text read 'said Peter' - such errors were the result not of crossed-wires behind the eyeballs, but of trying to take advantage of these predictable sentence patterns.

There have been some attempts to analyse this complexity in New Zealand. Kitchen (1976) observed one teacher's reading programme for a number of weeks in a junior classroom. He found that the teacher and the children acted differently, depending on whether there was a group situation or one-to-one teaching. He argued that the group situations were more stressful and less helpful from the child's point of view. Children rarely asked questions or requested help. They also feared ridicule from other children. The teacher also tended to be more directive in the group situation. The teacher tended to interrupt more and to ask fewer questions of the children.

Ng (1979) observed a lot more junior classrooms than Kitchen (she visited 38 in all) but could only make one visit to each. She found that 25 per cent of the reading instructional time was spent on non-reading activities, such as keeping discipline and organising group activities. She also found, as did Kitchen, that there was very little one-to-one teaching of reading. Nor did children spend much time reading on their own. In many of the classrooms, the best readers got to do most of the silent reading because they usually finished their other reading tasks first. She also noted that teachers were very directive in group situations - they did not allow much time for children to work out words for themselves; nor did they ask many questions about context clues which could help the children to work out words for themselves.

Harper and Graham (1974) focussed in on just one aspect of the classroom learning environment - children's on-task behaviour. They found that the less skilled readers also spent less time on task than the more skilled readers.

What conclusions can we draw from these studies? Probably very little at this stage. The data are still too thin. Some teaching and learning behaviours may appear inappropriate to the researcher, yet still be effective. Stress, in a learning situation may be a good thing. Immediate feedback, rather than asking questions about text clues, may be very helpful in some learning situations. The research dealing with on-task behaviour is difficult to interpret - is it more important that children be on the right task or just on-task? At the moment, the research data raise more questions than answers. Yet the research is interesting. The potential is there for considerable insight into classroom processes.

Language, Culture and Learning to Read

About 13 per cent of our students are either Maori or Pacific Islanders - in some schools, the figure is over 90 per cent. Many of these children have difficulty in learning to read according to a recent report prepared by the Department of Education:

> A high proportion of the students in standard 4 and form 2 who were reading at or below the 8 year level were non-Europeans, almost half of whom were having difficulties with the English language generally.
>
> (Renwick, 1978, p.26)

The report did not, unfortunately, present any data to clarify what was meant by the term 'language difficulties'. The research that we do have suggests that the problem is complex. This was one of the conclusions reached by Clay (1970) when she compared the reading progress of Maori, Pakeha and Samoan children in the 5 to 7 year age range. She found that the Maori children scored lower on reading tests than the Samoan children in her sample, even though the Maori children had a higher level of language competence. Clay argued that these results showed the considerable influence of home background on early reading achievement. She felt that the superiority of the Samoan children in reading may have been due to the high status given to reading and to literacy by their parents.

Clay did suggest, however, that language and reading were more closely related in later years of schooling, when the language used in texts was more complex. This argument was supported by Hill (1979), who found that Pacific Island children in his study, who were about 8 years of age, had more difficulty with story comprehension than did Maori and Pakeha children. He argued that the comprehension difficulties may have been due to differences in concept understanding.

It may be that the problems faced by Maori and Pacific Island children are related to language and culture, but in different ways - many Maori children may lack sufficient experience with texts; many Pacific Island children may, because they come from bilingual (or non English speaking) homes, lack cross-cultural understanding of concepts well known to Maori and Pakeha children. But these suggestions are speculative. The seminal study of the reading problems faced by Maori and Pacific Island children in schools has yet to be undertaken.

Reading Intervention Research

Some reading programmes are deliberately designed to intervene in the learning process of some children in order to 'make learning happen'. To be successful, however, an intervention programme not only must make learning happen, but must make it continue to happen after the intervention has been completed - otherwise, the children concerned will drop behind as their classmates continue to make progress.

Fry (1973) found that, by using tokens as rewards for progress, children with reading difficulties were able to make considerable progress on a word recognition task. She also found that these children had maintained their gains 3 months after the experiment had ended. The problem was, though, that they had not improved on their gains.

A number of other intervention studies (Mackay, 1976; Harrison, 1979; Wheeler, 1979) had similar problems. These programmes produced important short term progress, but their long term effects were not clearly established.

An intervention study, of the *Head Start* type, was conducted by Ritchie (1978) at the preschool level for Maori children from low income backgrounds. In the third year of the study, the teaching programme focussed primarily on providing massive book experience for the children. This involved reading lots of books to the children and asking them questions about basic print concepts. The programme also incorporated language experience activities. Follow up testing of the children showed that the children had made considerable progress in understanding of book concepts. Again, however, the long term effects are not yet clear.

A different problem occurred in a study by Robinson, Glynn, McNaughton and Quinn (1979). They trained parents to help their children, whose ages ranged from 8 to 12 years, in reading. The main focus of training was on what to do if the child made an error. The parents were also taught to use praise for correct reading and for self correction of errors. The tutoring programme was done at home, for 15 minutes at a time, 3 times a week. The programme continued for about 4 months. The children made considerable gains in oral reading accuracy and self-correction. The problem was that they did not make similar progress in the school setting.

The researchers found that it was only when training was provided at school as well as at home that comparable progress was made. These results suggest that intervention training, to be most effective, needs to be strongly tied to the reading instruction given in the classroom. The long term effectiveness of the programme has also still to be established.

Clay (1979, 1979b) has completed a study known as the *Reading Recovery Project*. It seems to be our most promising intervention programme to date. The aim of the project was to accelerate the reading progress of children who were in their second year of school and still not benefitting from their classroom reading programme. The children received tutoring for 45 minutes daily by a trained teacher-tutor. The training lasted 3 months. Follow up testing showed that the children had made dramatic progress - and that, in some aspects of reading, these gains were continuing to increase some 2 months after the tutoring had been stopped. The gradient of improvement had dropped considerably, however, and it may be that the rate of improvement tailed off altogether at a later period. Clay is continuing to monitor the progress of these children in order to gather data on the long term effects of the intervention.

Field Research and Evaluation

It seems to me that field research and evaluation is an important research category. Schools need information on the effectiveness of specialist help (such as inservice courses) and innovative ideas about the teaching of reading. Much useful information can be gained through field research and evaluation. Yet very little of this type of research has been done.

Slane (1976) reported the results of a field trial of a locally developed approach known as 'book experience'. The basic idea of the approach was for teachers to read and re-read interesting books by enlarging the print so that all children could read along with the teacher. The teacher encouraged the children to attend to the print by using a pointer, by pausing, and by incorporating reading instruction as part of the book reading process. Details of the approach were incorporated in an inservice course for teachers known as ERIC (Department of Education, 1976). This approach was compared with two other programmes for junior school children but it was found that no one programme was clearly superior to any of the others.

Another reading idea, known as 'Book Flood' (Staiger, 1979) was also field tested in schools. The 'flood' involved over 100,000 books - about 500 for each classroom studied. Again, however, the results did not show clear gains in reading progress, even though the children and teachers enjoyed the experience.

Looking back, I think that our field research on reading approaches has been of the 'shotgun' type. The focus of the research efforts has been too imprecise. It may have been more profitable to focus on specific design features in these programmes (such as the emphasis on attention to print in the book experience approach) rather than the programme itself, which is a composite of many different teaching ideas and processes.

I prefer the kind of approach used by McNaughton (1979). He focused on one specific strategy which teachers could use in one-to-one reading situations. The strategy was 'wait time' - that is, allowing sufficient time for children to work out words for themselves. I think that we will make more progress by carrying out this kind of precise research-analysing important features of teaching situations, one by one, to find out what pay-off we can expect from them.

My experience in evaluating the impact of an educational programme for parents suggest that we should also evaluate inservice courses in a similar way. My study (Nicholson, 1979) looked at the impact of a radio series and booklet called *On the Way to Reading*, which was designed to help parents learn more about the ways children learn to read. Indirectly, the radio series was aimed at helping teachers by enabling parents to provide appropriate help at home. In general, the evaluation data showed that parents got the 'message' of the radio series and booklet, but did not remember specific details. In other words, parents seemed to pick up the general principles which the series tried to get across - to enjoy the process, to praise for effort, to read *with* the children rather then *at* them, and to avoid 'growling' at them for making errors. Yet the long term pay-off of such an educational effort still needs to be established. It may be that the initial enthusiasm and basic principles will not be maintained without follow-up programmes on specific aspects of the radio series.

Survey Testing

There has been considerable effort in this area, but there have also been a lot of problems. In 1970, New Zealand participated in an international reading survey which involved fifteen different countries (Thorndike, 1973). The reading comprehension results for New Zealand were slightly higher than all other countries at the 14 year old level, and considerably higher for the sample group of children in the final year of school. The results for the 17 year old children were not really comparable because only 13 per cent of children reach the final year of school in New Zealand, compared with, say, 20 per cent in Scotland and 75 per cent in the United States.

The data for the 14 year olds were more comparable. The New Zealand results for this group were highest, followed by Italy, Scotland and the United States. Yet, as Thorndike, the project director, pointed out, the differences among these countries were small.

Perhaps the fairest conclusion that can be drawn from these data is that New Zealand reading achievement ranks highly among developed countries. Whether this is cause for complacency or concern depends on how we view the reading levels of the comparison countries. It is interesting to note, for instance, that community groups such as the Concerned Parents' Association are not convinced by these data. As Viney (1980) put it:

> There is little comfort in being told that New Zealand children rank, say, third in the world in reading skills, if the rest of the world is semi-literate.

A second survey, known as *Project CHILD* (Walsh, 1979), was conducted by the Department of Education and the New Zealand Council for Educational Research to find out what proportion of students, at the 11 year old age level, were having difficulty in learning to read, even though they were not handicapped by problems of general ability, sensory impairment or poor school attendance. The results of the survey indicated that about 5 to 10 per cent of students could be classified in this way.

Yet these data do not give us a clear idea of whether reading levels are as they should be for the other 90 to 95 per cent of children. A further study was conducted in 1978, called *Educational Standards in State Schools* (Renwick, 1978). It was based on data collected from 77 primary and 12 secondary schools throughout New Zealand. In regard to general reading progress, the report concluded that 'standards in reading are at least as good as they ever were' (p.25). In regard to children who were having difficulties with reading, however, the report stated that 'too many students are still not making satisfactory progress' (p.27).

The 'standards' report could be easily criticised as a political document, produced in an election year. Certainly the report lacked the usual criteria characteristic of survey research - stratified random sampling was not carried out; only a few of the secondary schools were sampled; different teams of inspectors with different views were used; observations were informal rather than systematic. Indeed, the report has had its fair share of criticism (St. George, 1978).

Looking back over all this survey testing, can we say that these data have clarified the state of reading for us? My feeling is that much of the research effort was addressed to the wrong question. Pressure groups such as the Employers Association and the Concerned Parents Association do not seem to want a 'return to tbe basics' in the sense of going back. What they seem to want is enough 'basics' so that their children can go forward. At least, this is how I read remarks such as those by Viney (1980, p.304).

> I believe that teaching children to read, write and calculate well must become the over-riding concern of primary schools. Once the realm of literature is open to children, they will be much more able to tackle the problems of life and society than they will be if they have to rely on the simple handouts and comic strips given to them in social studies to enable them to "solve" society's problems.

I suspect that the kinds of survey testing we have done in the past will never adequately answer this kind of concern. It may be more useful if we place a moratorium on the kind of psychometric analysis (Reid and Hughes, 1974; Hughes and Reid, 1979; Hattie, 1979) and criterion-based, normative testing (Reid, Croft and Jackson, 1979) that we have been doing, and take a close look at alternative approaches. To be frank, I think it is time for a radical reassessment of assessment.

Conclusion

In this paper I have argued that some very good research has been done in New Zealand. Yet there are huge gaps, particularly at secondary and preschool levels - and virtually nothing has been done in the field of adult reading.

Overall, the 'state of the art' in reading research in New Zealand can best be described as patchy. There is a clear need for a comprehensive plan of development. To my mind, the need is urgent, because the state of reading depends on the state of reading research.

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Science Education Research in New Zealand

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To review any area of endeavour it is first necessary to define the boundaries of the study. This is difficult to do for most subjects and research in science education is no exception. Whitfield (1979) considers it involves 'improving the quality and output of science education'. Kempa (1976) considers it is just 'research into the learning and teaching of science'. Renwick (1978) suggests simply that all educational research is concerned with finding answers to educational problems. But what are the problems of science education, specifically?

One of the difficulties with attempting to delimit science education research in New Zealand is that many of those working in this area are also involved with curriculum development work and/or are actively teaching science. Also, while many teachers would hesitate to say that they were undertaking science education research, the activities of some of them are virtually indistinguishable from the work done by education research students working in the field of science education.

For the purpose of this review, and with the above points in mind, science education research has been taken to be 'what people do when they are *primarily* concerned with *systematically* identifying and resolving problems in the teaching and learning of science'. This is

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perhaps a rather broad and generous definition but it is a view of science education research which needs to be taken if in fact such work is to be encouraged and developed, and is to be identifiable by science teachers as relevant to their concerns.

In terms of the above definition, science educational research is diverse. It includes:

1. Systematic effort aimed at the accumulation of valid knowledge about science education aims, procedures, and outcomes.
2. Inquiry into teaching conditions and other factors which may influence the attainment of educational aims in science.
3. The study of human learning as it is manifest in the context of science and in the institutional setting of science classrooms.
4. The study of the nature and place of science in the total curriculum from, for example, a philosophical or historical perspective.

In New Zealand work in this field is limited. Nevertheless, in the last 10 years almost 20 theses have been produced in New Zealand universities, in education and science departments, which could be considered to be in the field of science education research. Currently there are at least three doctoral students, as well as a number of masters students, involved in science education research. Numerous papers have appeared in the *New Zealand Science Teacher* which could be broadly classified in the field of science education research as well as occasional papers in other New Zealand educational journals (*New Zealand Journal of Educational Studies, Education, set* and so on).

Internationally, activities in the field of science education research are reported in journals such as *Science Education* and the *Journal of Research in Science Teaching* in the United States; *Studies in Science Education* and the *European Journal of Science Education* in the United Kingdom; and *Research in Science Education* in Australia. Contributions can also often be found in science teaching journals such as *School Science Review, Physics Education, Biological Education, Education in Chemistry* on the one hand, and in educational journals on the other, for example, *British Journal of Educational Psychology*. As evidenced by the papers cited in this review, contributions from New Zealand have appeared in a very large proportion of the above journals.

Science Education Research in New Zealand 1970-1979

In New Zealand universities there has been a slowly increasing awareness in science faculties of the legitimate place of science education research within science departments. For example the chemistry departments at Auckland, Massey, Victoria and Canterbury are active to some extent in chemical education research and the New Zealand Institute of Chemistry has had a regular Chemical Education Symposium as part of their yearly conference. Physics departments at Auckland, Waikato and also Otago have been active in the field of physics education research and the Institute of Physics in New Zealand holds regular symposia on Physics Education. Moreover, a few M.Sc. students working in university science departments have been involved in science education theses in recent years.

Education departments in New Zealand universities have produced the majority of theses in science education. In this regard Massey has been particularly productive. The theses cover diverse aspects of science teaching and learning. However, the number of published papers resulting from science education work in education departments seems to be limited. Sometimes the work is published in journals where it is less identifiable as science education research as such.

In recent years the appointment of people with backgrounds in science and education to the Higher Education Units at Auckland, Canterbury, Otago and Victoria has encouraged an interest in science education amongst science teaching staff at these universities (e.g., Peddie et al. 1977).

Many other science teachers, science advisers, teachers college lecturers and departmental officers have carried out small scale studies. In the main, these have been attempts, to find ways of assessing pupils, to gauge teacher opinion on syllabuses, to ascertain what units of work teachers teach where choice is allowed, and so on. Often those who have done this work have gained solutions to the particular problem of interest to them and have tended not to publish their work or alternatively have given brief details in the *New Zealand Science Teacher* or *National Education*.

A new development in science education research in New Zealand has been the sponsoring of science education research projects in universities by the New Zealand Department of Education. The *Interface Project* at

Auckland (Jones, 1979) and the *Learning in Science Project* at Waikato (Tasker, 1979) are two such projects which have brought together university people from education and science departments as well as departmental officers and teachers seconded from secondary schools. Other projects of this type are being planned.

To consider the work that has been done in the last 10 years in more detail, the four types of research activities detailed earlier in this paper will be used as a basis for categorization.

Systematic Effort to Accumulate Valid Knowledge About Science Education Aims, Procedures and Outcomes

It must be stated at the outset that a great deal of the work in this area has been somewhat less than systematic. Many of the references which will be cited are simply reports of new teaching methods which have been adopted with little more than subjective comment on their potential and their limitations. Nevertheless *collectively* these reports do provide accumulated knowledge about teaching and learning and for this reason they have a legitimate place in this review.

With respect to aims, the work of Duncan et al. (1971) is an example of a systematic attempt to gain views from a wide variety of people as to the desirable objectives of sixth form chemistry. Duncan et al. suggested that the relative importance of various chemistry objectives in the examination papers did not reflect the views of scientists and teachers. Teachers' views on the aims and content of various syllabuses have also been sought using questionnaires by Peddie (1976) who looked at chemistry at the secondary school level, Packer (1976) who investigated modular science proposals, and Petchell (1976) who sought information from Auckland schools on their views of the Form III and IV science syllabus. Although these studies are often very small scale, the influential position of those making such studies may mean that they do significantly influence future syllabuses. Petchell's study for the Auckland Science Teachers Association concluded 'that there would be very little evidence to support a major dismantling and rebuilding' of the Form III and IV science syllabus. Subsequent modification of the syllabus (Form I-IV draft syllabus, 1978) reflected that view.[1]

With regard to procedures there are many reports of new methods of teaching. The education symposia held at regular intervals by the Institute of Physics in New Zealand, and the New Zealand Institute of Chemistry are primarily concerned with communication of ideas about teaching - what is taught and how it is being taught - between Institute members teaching at the same level and at different levels of the educational system. These symposia reflect a general interest amongst teachers to learn what others are doing and this interest is reflected in the number of papers published in a variety of journals reporting on experiences with new syllabuses (Cosgrove, 1975; McGibbon, 1976; Hewson, 1978); new methods of laboratory teaching (Liley et al. 1976; Burns et al. 1979); and new methods introduced because of new educational technology (Penfold, 1976; Penfold, 1979; Osborne and Potter, 1979; Osborne, 1980; Pettigrew, 1979). Reports on the teaching of new content introduced because of new science (e.g., Earnshaw, 1974; Hodgkinson, 1978) or new societal trends (e.g., Callaghan and Jones, 1979) can also be found. Reports of the novel use of various methods of teaching at a particular age level are also common: project work (Lockett, 1974; Shaw, 1976; Lockett, 1977); contracting (McGrath, 1975; Francis, 1975) and team teaching (Jowett, 1976). Reports can also be found of attempts to teach objectives not normally taught (Norris, 1976).

While the above reports collectively give some indications of methods being used in classrooms to teach science, there appears to be a lack of reports which give some overall perspective of the teaching and learning practices in schools. McMurray (1971) used a questionnaire to show teachers were facing difficulties in implementing the then new Form I science syllabus. Julian et al. (1979), using a questionnaire, investigated class size, the proportion of teaching time spent in laboratories, the qualification of technicians, and finance in secondary school science departments. Earlier Osborne (1973) had investigated the number of graduates in chemistry, physics, biology and mathematics in New Zealand secondary schools. Hitchings (1975a) and Peddie (1976) have both investigated chemistry teachers' views on in-service training. While all these reports are based on the premise that effective teaching depends on good resources and well qualified teachers, the typical teaching methods and learning procedures used in schools remain largely undocumented. However, the recent work of Jones (1979) with respect to Form VII and first year university physics and Tasker (1979) with respect to Form I-IV science are examples of attempts to rectify this deficiency.[2] Munro's work (Munro, 1976) in sensitizing teachers to what is going on in their own classrooms should also be mentioned here.

With regard to outcomes, the simplest outcome to measure is the number of students taking the subject at various age levels. Osborne (1973), Neilson (1974) and Strachan (1974) have detailed some aspects of enrolments in science. The Department of Education monitor enrolment trends but their actual figures are rarely published in a way that trends can be easily discerned. Examinations achievement can also be documented. Mitchell (1971) investigated the pass-fail criterion as it operated in the end-of-year examinations of the University of Otago over nineteen years. His results include science and raise questions of validity and reliability of university examinations. Comber and Keeves (1973) compared aspects of achievement in secondary school science in 19 countries including New Zealand. Putt (1978) has compared the grades in first year physics at Auckland University, Melbourne University and some universities in the USA using common examination questions. Peddie and White (1975) investigated the reliability of first year chemistry examinations at the University of Auckland, their results suggesting one reason why university success is so difficult to predict. Putt (1979) has investigated the effect of time restrictions on students' exam performance.

Outcomes other than overall achievement in a subject have also been studied. Osborne (1979) investigated the ability in basic mathematics of matriculating physics students using a criteria-based test. The attainment of particular course objectives has been investigated by Gibbs (1978) with respect to sixth form chemistry and Osborne (1978) with respect to first year physics. Novel techniques for the measurement of various objectives have also been developed. McGrath (1973) developed a test to investigate skills and processes in Form III and IV science. Osborne (1977) investigated the subjective assessment of student profiles in physics.

In reviewing this work on 'aims, procedures and outcomes' over the last ten years what overall comment can be made?

1. With respect to aims, Duncan's study (Duncan *et al.*, 1971) is unique in seeking comment about curricular objectives from several sections of the community. The authors stated: 'one hopes that the conclusions drawn and methods used are sufficiently interesting for others to undertake similar work in the areas with which they are specifically concerned'. In my view it is a pity that this challenge has not been taken up, not least because the deciding of aims for our curricula is an important and central issue.

2. With respect to procedures, this is an area of great interest to teachers and many papers have been published. However almost all of the papers on innovations have been authored by someone involved in the innovation. What is desperately needed, I believe, is *independent* appraisals which carefully document what is happening and give a detailed analysis of the perceived potential and limitations of the innovative procedures. Careful documentation is also needed about what is going on in typical science classrooms. Such work, I would suggest, would engender worthwhile soul-searching amongst teachers and curriculum developers and provide a firm base on which to build more contrived research studies.

3. With regard to outcomes, the development of valid and reliable assessment procedures to measure pupil attainment with respect to the breadth of the objectives of today's science courses is of major importance. Despite the work done much more needs to be done in this area. Assessment is the tail that wags the dog at all levels of science teaching.

Inquiry into Teaching Conditions and Learner Factors Influencing Attainment in Science

With respect to investigating the teaching conditions influencing attainment of educational aims in science, Flynn and Munro (1970) compared Nuffield science teaching with more traditional methods. With respect to the objectives they measured, which were indeed objectives of the

Nuffield course, those children who had been taught Nuffield did show significantly more growth on the objectives measured than the control group. However they are cautious in their conclusions commenting on possible Hawthorne effects and the teamwork of the teachers in the experimental schools 'could have been more important than course materials'. More recently, Putt (1977) and Longbottom (1979) have investigated the effectiveness of individualised instruction, in university physics and Form IV science, respectively. In addition the *Interface Project* (Jones, 1979) and the *Learning in Science Project* (Tasker, 1979) although not comparative studies and less formal than the above studies, are centrally concerned with the teaching and learning conditions influencing attainment of educational aims in science.

A large number of psychometric studies have been concerned with learner factors and influence of these factors on various aspects of attainment. With regard to cognitive attainment, Marsh (1970) investigated the degree to which pre-entry factors were associated with the outcome of their first year examinations. The students studied formed almost half of the 1968 intake to Victoria University and included science students. Osborne (1976) and Peddie et al. (1977) have carried out similar studies for first year physics and chemistry respectively. At the secondary school level the IEA study (Comber and Keeves, 1975) investigated science in New Zealand schools along with science education in 18 other countries. Other small scale psychometric studies have attempted to establish factors influencing the following: application of knowledge (Okech, 1971); vocabulary in science (Connors, 1972); aptitudes (Cookson, 1975); attitudes (Thomas, 1976); and interests in science (Lai, 1977). Many of these studies are limited in that the learning experiences of the children are largely undocumented or even unknown, and the validity of the tests developed as part of these studies is often unstated.

In reviewing this aspect of science education research over the last 10 years I personally consider that the psychometric studies have not had the impact on teaching that was hoped for. It is difficult for the statistical models to represent the complexity of the teaching and learning situation, it is difficult to identify and measure all important variables, and the findings are not easily related to how teaching and learning should be modified. As suggested earlier what seems to be lacking, at least in part, is a firm base on which to build these studies. The careful documentation of what goes on in classrooms and what goes on in the home (e.g., Davis, 1979) may lead to the development of significant hypotheses about teaching and learning and the identification of significant variables. To my mind what we have learnt with regard to this aspect of science education research in the last 10 years is that we must first learn to walk before we can run.

Study of Human Learning in the Context of Science

McAlpine's study of open-ended thinking with pupils of high ability in science (McAlpine, 1971) is an example of a study of human learning in the context of science. Aspects of the work in the *Learning in Science Project* concerned with children's meanings for words used in science and children's views of the world (Stead and Osborne, 1979) might also be classified in this category.

While there are few New Zealand studies which are most appropriately categorized under this heading, overseas research would suggest that science is a fruitful area in which to study cognitive development. Many overseas researchers in this area have a background in science education and recent work, for example, papers from the Cognitive Development Research Seminar, Leeds, September, 1979, suggests that ideographic studies, based on exploring the learner's world, will be a major area of study in the 1980's.

Study of the Nature and Place of Science in the Curriculum

The study of the nature and place of science in the curriculum, from philosophical and historical perspectives, provides a further essential component to science education research. Such analyses can give new insights into what should be taught and learnt, and what logical difficulties are associated with what teachers are attempting. Such studies also provide opportunities to learn from the past.

With regard to the philosophical perspective, Neilson (1974) considered biological education in New Zealand schools. He analyzed trends in teaching and questioned what he perceived as a move by curriculum developers and textbook writers toward quantification, reductionism and factualism. In the light of this analysis he proposed some alternative goals. Burkin (1976) has considered the relationship between new syllabus goals, what is appropriate for most children, and what is actually taught in schools. Bagnall (1979) has considered the nature of science and the needs of adults with respect to education in the sciences. Earlier, Peddie (1973) made a critical examination of the objectives of the school science syllabus, while Greening (1976) considered the various teaching methods applicable to microbiology teaching.

A number of short papers in the *New Zealand Science Teacher* could also be included here. For example, Walker (1973) has considered the problems of the lower ability pupil doing science. Vincent (1978) provided an analysis of laboratory activities, while Fletcher (1979) considered whether or not the present teaching is nurturing scientists or conformists.

From an historical perspective Barton (1974) has compared science and chemistry teaching in New Zealand since 1940, with trends in the USSR, UK and USA. Hitchings (1975) has considered chemistry in New Zealand and also (Hitchings, 1978) reviewed science teaching in New Zealand from 1958-1977. Malcolm (1979) has explored the trends in science education over the last three decades as well as considered the relationship between views on the nature of science and science teaching. There has not been a large number of studies in this field in the last 10 years and possibly science teachers, in particular, undervalue such studies. However so long as objectives and teaching continue to undergo change, teachers and curriculum developers need to see what they are doing in a broad philosophical and historical perspective. For this reason, therefore, I believe further studies in this area are important. Consider, for example, how many teachers were able to judge the innovative Keller Plan (PSI) more rationally on learning it was very similar to the Dalton Plan of the 1920s?

Conclusion

This review shows that a number of research papers and theses on science education have been written during the last decade. However what impact has this work had on the teaching and learning of science in New Zealand? I would consider the impact is very small indeed and any that has occurred is possibly dependent as much on other factors as on the quality of the research; for example acceptability of findings, status of the researcher, dissemination of the findings, and so on. Much of the research has unfortunately been small scale, short term and done by individuals working in isolation for a specific purpose, for example to gain evidence to support a viewpoint or to gain a degree.

In terms of overseas experience what is required if science education research in New Zealand is to produce worthwhile results, and positively influence science teaching and learning, is:

1. Sustained team effort where expertise and experience is built up over a period of time. The backgrounds of those in the team must be diverse, but as Fensham (1976) implies an essential requirement for the majority of team members is a good background in science, preferably with at least thesis research experience, as well as considerable teaching experience and expertise. The development of such team work requires a commitment by all sectors of education (e.g., New Zealand Department of Education, the universities) to science education research.
2. Increased identification with, and involvement in, science education research by teachers of science at all levels, but particularly by university science teachers who have, as Hestenes (1979) suggests, considerable influence on science teaching at all levels, for example, through the training of future science teachers, influence on syllabuses, textbook writing and so on. Hestenes makes the comment that at least in the USA:

   > Science education specialists are located in schools of education so that they are cut off from the well-spring of their discipline, the various scientific disciplines themselves. Consequently their research suffers in quality and is limited primarily to the teaching of science to young children. Science education will not come of age until it is recognized and actively supported in the universities by departments of physics, chemistry and biology and mathematics. (Hestenes, 1979, p.240)

3. A firm link to the various disciplines of education to ensure that the learner and teacher, rather than the science, is of central concern.

What then of the future of science education research in New Zealand? There are signs that are promising:

1. The collaborative ventures of universities and the New Zealand Department of Education through the sponsoring of science education research (for example the *Interface* and *Learning in*

Science projects) and the sustained team work that this is encouraging.

2. The increasing interest by science teachers in science education research as evidenced by papers in the *New Zealand Science Teachers Journal* and the proposed science education research section in the New Zealand Science Teachers Association Conference in 1980.
3. The number of people in New Zealand university science departments who are interested in science education research (20 such people are referenced as authors in this review).
4. The possibilities offered by conferences such as this one to establish links with others interested in the field and thereby encourage a community of people involved in science education research who can feel they can openly share ideas and problems through correspondence, sharing of working papers and conferences.

The Australian Science Education Research Association has grown from tentative beginnings ten years ago to a healthy community of researchers in 1979. What Australia could do in the 70s, surely we can do in the 80s.

Footnotes

1. The draft syllabus specifically refers to Petchell's survey.
2. Fensham (1976) has pointed out the need for such work:

> Much contemporary research in chemistry and physics is still the careful systematic reporting of the properties of substances and phenomena. A very large amount of this must occur before hypotheses of significance can be formulated and put to empirical test. Many workers in educational research seem to feel that such a phase is not enough and rush into hypothesis construction and testing. This leads to data which are consistent with trivial hypotheses... or non significant results - the interpretation of which is again often confused. (p.108)

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Commentary

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I wish to comment on the three papers and the symposium which followed the state of the art in science education paper. Those of us who have been involved in the science education stream today can say 'we had a good day'. However I suppose I am expected to say more than just that.

The papers in the science education stream, I believe, focussed on some very basic questions for science education research if it is to contribute to the improvement of teaching and learning, namely:

1. *What is really going on in our classrooms with regard to learning science?*

Ross Tasker[1], in describing some aspects of the work of the *Learning in Science Project*, really addressed himself to this question and his message was clear: to find out you first have to get into the classroom.

2. *What is really going on in children's minds in terms of their view of the world?*

Beverley Stead[2] in her paper on aspects of light, made it clear that to find out you have to first talk to children.

3. *How can we improve teaching and learning?*

John Longbottom[3] in his paper explored the potential and limitations of self-paced instruction. In the symposium[4], organized by Bruce Penfold, the potential and limitations of computer-assisted-learning were considered.

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[1] Ross Tasker, *The Learning in Science Project : Considerations Relating to Approach and Methods.*

[2] Beverley Stead and Roger Osborne, *Exploring Science Students' Concepts of Light.*

[3] John Longbottom, *Student-Paced Lessons: An Experiment in IV Form Science.*

[4] Bruce Penfold, *Computer Based Teaching in Tertiary Science;*
K.W. Duncan, *Batch Processing Simulations in Large Classes.*

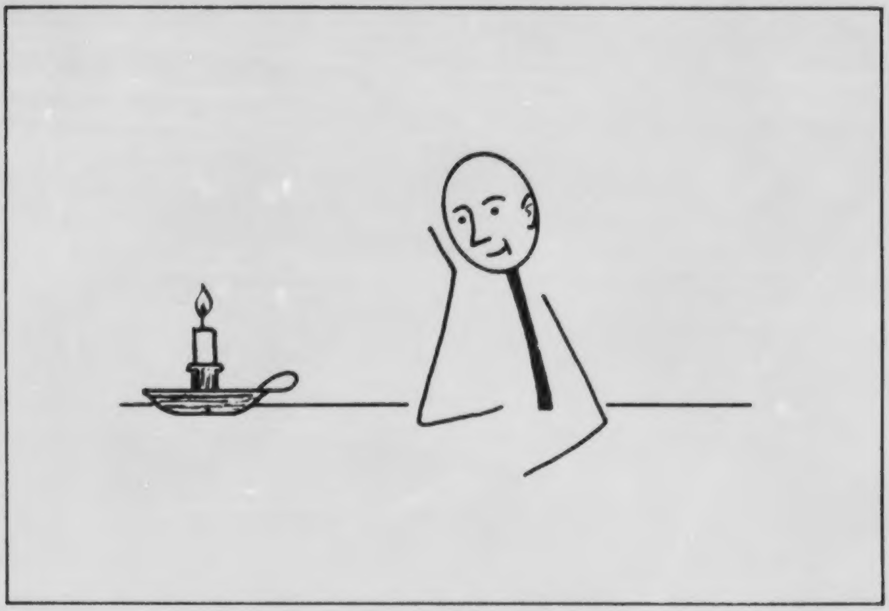
While I would like to comment in detail on each of the three papers and the symposium, the limited time available precludes this. Instead I will merely indicate something of the flavour of the work described in the first two papers.

Ross Tasker in his paper emphasized the importance, for research on teaching and learning, of getting into classrooms. For example, the more the *Learning in Science Project* explores science classrooms the more the limitations of questionnaire type work become apparent. Let me give an example of a real situation.

> George was a quiet boy sitting in the back of a Form IV classroom. The interviewer had been in the class all period and sat down alongside George who was working by himself.
>
> Interviewer: *What is the best thing you do in science?*
>
> George: *Chemistry and dissections.*
>
> Interviewer: *What have you dissected this year - anything?*
>
> George: *No, not yet... we have been doing a bit on the body and digestion and we are going to dissect a hare in a week or two.*
>
> Interviewer: *You are doing some in a week or so?*
>
> George: *Yes.*
>
> Interviewer: *Sort of interesting is it?*
>
> George: *Yeh, quite good.*
>
> Interviewer: *Did you dissect anything last year?*
>
> George: *No we didn't get onto that.*
>
> Interviewer: *Did you do any at primary school?*
>
> George: *No.*
>
> Interviewer: *So you reckon dissection is pretty good although you haven't done any yet?*
>
> George: *Oh I've read a lot about it.*

The questions to be answered are these: what would George have said in a questionnaire asking *'what is the best thing you do in science?'* and what assumptions would the researcher who administered the questionnaire be likely to make on receiving the answer *'dissection'*?

I must now comment on Beverley Stead's paper, particularly as some of you found the *Dominion* headline (7/12/79) 'Children in the Dark about Light' rather mysterious. Beverley interviewed children individually about their concept of light by using a set of cards, each one showing a line drawing depicting a simple everyday situation involving light. For example, the following diagram shows her first card.



She then asked pupils: *'Does the candle make light?'* followed by *'Why do you say that?'* *'What happens to the light the candle makes?'* followed where appropriate by *'Does it stay around the candle or move out?'*, *'About how far from the candle would the light go'*, *'Would it go as far as the person?'* *'How is it that the person is able to see the candle?'*

Other cards and similar questions were used to explore student's views about light from the sun, the moon, a torch, an electric heater, a television set, a bright red painting, a mirror, a movie screen and a rainbow. In this way Beverley was able to gain insight into children's thinking about light.

Typical answers, which were ascertained as typical by subsequent broader based testing, are exemplified by the children's answers to the question, *'How far does light from a candle go?'*

Type A answers:	*'It goes as far as it can go.'* *'It goes out in rays - ricohets off objects.'*
Type B answers:	*'One metre at the most.'* *'It goes up to a certain distance.'*
Type C answers:	*'Just stays there... just lights up.'* *'Stays there.'*

These pairs of answers, given in each case by a Form V pupil and a Standard 3 pupil respectively, give us food for thought about the teaching of, and the learning about, light. Students must have the basic ideas before they can meaningfully appreciate more complex ideas like angles of incidence, refraction, and so on.

In conclusion, I believe that in science education research we are starting to identify some basic and important questions which need to be answered if teaching and learning is to be improved. Moreover, we have started, I believe, to look in the right places for these answers. Hopefully the 1980's will provide the opportunities to continue the search.

Mathematics Education Research in New Zealand

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Before the nineteen sixties the teaching of mathematics received little critical evaluation or scientific study anywhere in the world. There have, of course, always been critics of the teaching of mathematics, but they have rarely, until recently, offered evidence to support their subjective judgements. Now, mathematics education research is developing into a discipline in its own right. An extensive international literature has emerged. Journals such as *The International Journal of Mathematics Education in Science and Technology, The Journal for Research in Mathematics Education, Educational Studies in Mathematics, The Journal of Childrens Mathematical Behaviour,* and *Problem Solving,* have all commenced publication in the last decade or so and carry a considerable volume of research-oriented material.

International organisations have been formed. The International Commission on Mathematics Instruction has held three Congresses, the fourth is to take place during 1980. Other groups such as The International Group for the Psychology of Mathematics Education and the International Study Group for Mathematics Learning have been established. Postgraduate programmes in Mathematics Education have become commonplace in universities around the world.

There can be little doubt that the stimulus for this activity has been the curriculum reform movement of the 'new mathematics'. While the movement was initially based on somewhat subjective judgements

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A paper presented at *Research in Education in New Zealand: A Balance Sheet,* First National Conference of the New Zealand Association for Research in Education (NZARE), Victoria University of Wellington, 7-10 December 1979.

about content, reformers have been asked to demonstrate that their changes produced improvements in the classroom. In addition, the controversy which the changes produced has drawn new scholars to the field and made educators realise that research in mathematics education is an essential adjunct to curriculum reform in the area.

New Zealand was relatively cautious in its reactions to the curriculum changes and has also been slow in making positive movements in the research area. There are, however, signs of increasing activity and this paper will seek to summarise the character of this activity and to suggest future directions.

The Nature of Research

There is no obvious set of criteria by which work may be judged to qualify for the title of 'research' and so might be included in a 'state of the art' paper. We could insist that the research has an appropriate theoretical background, that experimental controls are employed, that every possible test is made to validate the procedures employed, the data collected and the conclusions reached, and that the researcher is very well prepared in the field in which the research is undertaken. If we did this then this paper would be a very short one. It seems more appropriate, in a developing area, to be liberal in our interpretation and to include, and hence encourage, activities which may lack the sophistication of a true research project but which are genuine attempts at what in UNESCO (1972, p.129) is described as 'disciplined inquiry'.

Many such activities have the potential to be developed to a stage where they might suggest generalisations, principles, or theories and so fit into a more formal definition of research.

A Review of Recent Research Activity

In order to collect information on activities, over the last five years, within this broad interpretation of the term 'research', requests were sent to each District Senior Inspector of Primary Schools, to each of the Mathematical Associations and to each Teachers' College. In addition the *New Zealand Mathematics Magazine* and the *Newsletter of the New Zealand Mathematical Society* were asked to carry requests for information. A survey of New Zealand educational and mathematical publications over the period was also undertaken.

As a result, 82 papers or projects were identified and these are listed at the end of this paper in the *Bibliography 1975 - 1979* and in the table of other reported activities.

Classification of this information presents some difficulties since no matter what classification is chosen there will be studies which cross the boundaries. After some experimentation, it was decided to classify first by institutional setting, using a category of 'General' for studies which failed to fall into any other single category, and then by area of research, using the UNESCO (1972) categories of (a) curricula, methods and materials, (b) teaching and the teacher, and (c) learning and the learner. Since these categories are not mutually exclusive, subjective judgements had to be made in a number of instances as to the major emphasis of the study. The results of the classification are shown in Table 1.

Table 1: An Analysis of the Number of Papers and Projects on Mathematics Education in New Zealand, 1975-1979

	Curricula, Methods and Materials	Teaching and the Teacher	Learning and the Learner	Total
Preschool	-	-	-	-
Primary	8	-	4	12
Secondary	41	1	3	45
Tertiary	11	1	5	17
General	4	2	2	8
Total	64	4	14	82

Clearly, the most popular area of research is that of curricula, methods and materials. Of the 64 studies in this area, 27 were concerned with various aspects of individualised instruction, 14 with assessment procedures, 8 with studies of the curriculum itself, and the remaining 15 with a variety of organisational procedures and material for the classroom.

The lack of activity in the teacher section is, perhaps, a reflection of the difficulties which have been experienced by New Zealand schools in recruiting well qualified mathematics teachers. This has led to attempts to design 'teacher proof' programmes and to an attitude which regards the teacher as an 'intervening variable' in studies of mathematical learning. The concentration of effort on developing structured mastery learning programmes is further evidence for this view.

The most significant feature of the studies concerned with the learner is the level of sophistication of the projects which is noticeably higher than in the other areas. To some extent this reflects the difficulties associated with research in the area, but it is interesting to note that the majority of thesis work is included in this section.

The distribution by institutional setting shows considerable activity in the secondary field. There can be little doubt that a considerable proportion of this work is a result of the stimulus provided by the Mathematical Associations around the country. That there is so much effort in the tertiary field is also encouraging, this would certainly not have been the case ten years ago. The lack of preschool projects is disappointing, but the area of mathematics education is not well defined at this stage of development, and this may, in part, account for the complete absence of identifiable material.

A further classification of the 82 projects was made according to the occupations of the researchers. This information is presented in Table 2. The category 'Student' was used if the study was part of a formal course requirement, regardless of the occupation of the student concerned.

Table 2: An Analysis of the Number of Studies Undertaken by Researchers in Different Occupational Groups

Student	8
Primary school staff	7
Secondary school staff	36
Teachers' College staff	6
University staff	19
Departmental officers	6
	82

There are two major features which emerge from this analysis. Firstly, it is clear that there is a significant body of teachers, particularly in the secondary service, who are willing to be involved in mathematics education research. Secondly, it is worth noting that all but one of the studies undertaken by university staff were by members of Mathematics, rather than Education, Departments. This indicates a significant swing, by the universities, towards the acceptance of subject education research by staff as a valid academic pursuit, equal in status to research into the discipline itself.

The I.E.A. Second Study in Mathematics

In trying to identify particularly significant individual projects, the first obvious contender is the New Zealand involvement in the Second Study of Mathematics by the International Association for the Evaluation of Educational Achievement (Garden, 1979). The scope of the study is extremely wide covering surveys of attitude and achievement of pupils, of factors assumed to affect achievement, of background and attitudes of teachers and of the methods they employ, and of school and community characteristics. All of these will be analysed against a detailed analysis of the curriculum.

Survey research of this kind always poses at least as many questions as it answers and there are already many possibilities for research suggested by the progress reports. We may be proud that New Zealand is playing the key role in this international project and should be prepared to make the most of the information and stimulus which it will provide.

The Evaluation of Instructional Programmes

The other recent work which may turn out to be of particular significance is that of Dr Murray Coppen (1978) on the evaluation of individualised mathematics programmes. In view of the number of studies in this area, Dr Coppen's discussion of the conceptual and methodological problems associated with the evaluation of innovative instructional techniques or materials is particularly important and his suggested alternative research paradigm using a general systems theory analysis approach has exciting possibilities.

Mathematics Education Research and the Teacher

The most important overall feature which emerges from the analysis is, perhaps, the involvement of teachers. This may well hold the key to the future direction of research in the country. In his summary of the discussion which took place during the session on research related to the mathematical learning process at the Third International Congress on Mathematical Education, Skowronek writes:

> In the manner of a realistic utopia, we could imagine the teacher as a classroom researcher examining in concrete teaching situations the specific problems raised by the integration
>
> - of the content structure,
> - of the cognitive structure of the learner,
> - of the structure and organisation of teaching.
>
> (1977, p.245)

New Zealand is, of course, far from this 'realistic utopia', but has perhaps made the first steps towards it. We need, however, to be quite sure that these steps are in the right direction. Looking at the character of the studies undertaken by primary and secondary teachers we see that all except one of these are in the area of curricula, methods and materials. There is nothing wrong with this, of course, but it must be recognised that anything other than subjective judgement on the effectiveness of instructional methods or materials is extremely difficult to achieve. Reading most of the contributions in this area, one receives the distinct impression that teachers are seeking programmes which are not only 'teacher proof' but also 'pupil proof' and in some completely general sense 'better' than existing practice. The premise that one programme may be said to be 'better' than another, and hence that there is a 'best method' of teaching is at least debatable if not patently false in that it ignores the variability of the students. In this context Skowronek writes:

> Numerous studies of mathematics learning are mostly statistical in character and accordingly focus on average achievements and learning results, not on learning processes, thus tending to conceal the decisive recognition that mathematical 'insight' or mathematical understanding may be achieved in individually highly different learning processes.
>
> (1977, p.243)

It is an understanding of these individual learning processes which is the major requirement of the discipline of mathematics education. Skowronek again writes:

> Not until a comprehensive description of the individual acquisition processes operating in teaching has been provided, will it be possible to make the first attempts at a formulation of a comprehensive theory of mathematical learning.
>
> (1977, p.244)

Certainly the teacher should be encouraged to develop new approaches, materials and methods in the classroom, but there is a need for a greater awareness, and disciplined study, of the very different effects these methods and materials will have on individuals. Successful research into individual learning processes is not easy - certainly much more difficult than statistical research, which comes relatively easily to mathematicians. It requires skilled observational and interviewing techniques which can be developed as a result of a combination of training and experience. But given this experience and training, teachers are in a much better position to undertake this kind of research than any professional researcher or graduate student, simply because they are constantly in touch with the learning situation. Teachers can respond immediately, in a disciplined way, to cues from individual pupils that significant changes in learning behaviour have taken place. A planned, formal research project is much less likely to identify these important discontinuities in behaviour.

If teachers are to take this key role in research, then opportunities must be made for them to acquire the necessary skills, both by pre-service and in-service training. Teachers Refresher Courses, for example, have traditionally concentrated on curriculum matters. There seems to be a good case for courses in research techniques of all kinds. It may seem foolish, at a time when, we are told, teachers are leaving the profession in droves, to suggest yet another task to be undertaken in the classroom. But the evidence of this survey is that there are teachers who would welcome the opportunity for professional and personal growth through research and this kind of growth could only benefit both the self image and the public image of the profession.

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Research on Continuing Education in New Zealand

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Any survey of research in continuing education requires that there be an initial definition of the terms used. In the present circumstances we have tried to keep this to the minimum commensurate with the task and the enforced brevity of a conference paper. Not everyone will agree with our definitions but they are needed, if only to avoid confusions which might otherwise arise.

Continuing education we define in the broadest way as that education which is pursued by people who have left school and who are no longer required to attend it. This definition includes formal as well as informal kinds of education, as well as any that is specifically vocational, but it excludes, for the most part, that large field of post secondary formal education (especially the kind that takes place in universities) which is usually called 'higher education'. We recognise that this is an arbitrary decision.

We have also side-stepped the even larger area which is often called 'adult learning'. There are two reasons for this. First, 'adult learning' is a term of somewhat ambiguous usage, referring either to all forms of adult learning, whether in institutions or otherwise (for example, 'self directed' adult learning) or, more specifically, to the

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field of adult teaching (methodology) and adult learning (psychology). The second reason is that it would be impossible to deal with 'adult learning' adequately within a paper of this length.

The term 'continuing education' has been used, instead of the perhaps more traditional 'adult education', in order to avoid those unfortunate overtones of the past that have implied the latter to be the playground of 'hobbiests' or cultural 'dabblers'.

Terms such as 'lifelong education' or 'recurrent education' have been avoided as well, partly because of the difficulties of definition, partly because they appear to identify philosophies or approaches to continuing education rather than a category or sub-category of educational experience.

As for 'research', we have defined this as any study of practice or policy, past or present, of a descriptive or evaluative nature.

We have assumed that there is no great purpose to be attained in arguing what does or does not constitute 'education' although, as a number of writers have pointed out, this is an especially confusing and important problem in some areas of continuing education; nor has any attention been given to that long-standing bone of contention - the education versus training issue. In fact, when education becomes involved in community action, it becomes quite arbitrary and often depends on what agency is involved, as to whether this activity is categorised as 'education', 'recreation', 'community development', 'social welfare' or under any one of a number of other labels.

Our approach has been to look for information about research carried out by people working in or with organisations and agencies usually classified as educational - or for research related to those agencies. For this reason we have not included (as we might have done) such studies as those of leisure patterns and their use undertaken for the Ministry of Recreation and Sport, even though these may be a mine of information for people working in some fields of continuing education; nor have we included such statistical information as might be obtained from the Department of Labour on occupations and employment.

Information Sources

The principal printed source is undoubtedly Roger Boshier's *Adult and Continuing Education in New Zealand: 1851-1878: A Bibliography.* The serious student will discover, however, that excellent as this work is, it provides no more than a sketch map of the territory - and one that can be substantially expanded with only a modicum of effort. This, of course, is probably what Boshier intended. But even if one leaves aside work in progress at the time of the compilation and now completed, and other work too recent to have been picked up, there are enough worthwhile items unrecorded to swell any second edition to twice the size of the present volume.

Continuing Education in New Zealand, the journal of the National Council of Adult Education, Wellington, is published twice yearly and is the other major source of current material. But, as a useful article by D.M. Guy published in the October 1976 issue suggested, research articles appear much less frequently in *Continuing Education* than they do in comparable American and British journals. Fewer than 4 percent of the New Zealand articles appearing over a 4 year period could be classified as research while over a similar period about 80 percent of the articles appearing in a comparable American journal, and nearly 30 percent in a British equivalent, could be so classified.

Another essential source consists of the invaluable bibliography of unpublished studies compiled by Keith Pickens and published in the *New Zealand Journal of Educational Studies*, Vol. 10, No. 2; Vol. 11; Vol. 14, No. 1. We also consulted *In-progress Degree and Diploma Studies, 1979*, NZARE, 1979.

Trends in Research

We next set ourselves the task of finding out what kind of research has been carried out over the past few years (or is still in progress), to identify the directions it is taking, and (if possible) to indicate the most profitable of those directions. There was no intention of assessing the quality of the research, but rather a hope that it might be possible to decide where the *terra incognita* (the largely uncharted aspects of continuing education research) might lie.

Appendix D lists the research projects we located. If the data had been available, it would have very likely been useful to carry out a longitudinal study of the research patterns themselves. Certainly there is no doubt that the pattern of continuing education, as of post-school education and training as a whole, has altered radically in the last decade. In this respect, Appendix C presents information indicating the changes in emphases and expenditure that have occurred in the various post-school sectors during the latter half of this period. The most significant trend, of course, has been the rapid growth in the technical institute/community college sector. Another highly significant change has been the equally rapid growth of the distance education agencies (Correspondence School, Technical Correspondence Institute, and Massey University's Center for Extramural Studies) which between them currently serve close to 50,000 people. In fact, an interesting project for a researcher, or assiduous student, would be to list the research studies chronologically, in order to determine the extent to which they reflect the changes that have occurred in the patterns of provision.

On the evidence available, however, it is already clear that there is currently little relationship between the shape of post-school education and the pattern of research concerning such education. Put simply, no one merely looking at a compiled list of research topics (or for that matter even at published descriptive material) could deduce the relative weightings of the various provisions for continuing education. The pattern is quite arbitrary, spasmodic and patchy.

Even if we exclude from 'continuing education' the field of parent education (as falling typically within the early childhood field, where it has been concentrated) the research material remaining is plainly opportunist, and the result of the particular interests of particular people or groups, at particular times.

The establishment of an Adult Learning Unit as a section of the New Zealand Council for Educational Research is another significant development even though the unit has not been in existence long enough to have made any particular contribution. It should, however, become a major link in the research system as a whole, and eventually serve as an instigator and source of studies not able to be readily or conveniently carried out elsewhere.

Major Studies With Broad Implications

Few research studies of a rigorous and statistical kind have been produced as yet. But of those available four are particularly noteworthy:

1. Roger Boshier's clientele study of three Wellington agencies.
2. The UNESCO/Canterbury University Extension Studies survey of Christchurch.
3. The study of continuing education by the Departments of Education and Statistics.
4. The Massey University study of dropout in extramural students.

The principal outcome of these studies is that some kind of data base is beginning to emerge from them, and that this provides a starting point from which other developments in research can be launched. The Boshier study is the most sophisticated in terms of methodology, but the Massey University extramural study approximates it, and bears some relationship to the same issues. Similarly, the two survey studies also form a matching pair and preliminary data from the national survey broadly confirms the patterns found in the Canterbury study. Of greater interest, however, is the extent to which the categories used in the national survey will prove of value in further analysis and in follow-up research. It has categorised various forms of 'agency directed learning activities' - that is, identified a wide range of learning activities organised to the extent that the learner has been enrolled with, or has been dependent on, a teacher either in a formal agency or otherwise. The preliminary analysis seems to be demonstrating both the virtues and the defects of such a broad survey. One major defect seems to be that even with a statistically significant national sample, some categories into which the data have been assigned have proved so gross that the conclusions drawn from them are too generalised to be useful. The narrower base of the UNESCO/Canterbury study, on the other hand, permits more precise conclusions to be reached.

There are, however, changes taking place. The fact that the Department of Education has been able to engage in research programming and has begun to sponsor or undertake organised evaluative studies has been significantly linked to some recent developments in the continuing education field. We note for example the studies of extended trade training, of adult students in secondary schools, of nursing education in technical institutes, of the Hawkes Bay Community College, the Wairarapa Community Action Programme and the survey of school leavers in the Rotorua area. It cannot yet be said that these (and other similar studies) constitute anything like a systematic means of evaluating developments, but they do permit a significantly broader perspective than was possible a decade ago. Assessment of important developments has been undertaken by other agencies as well. We note in particular the Vocational Training Council's field study of extended trade training, and the recent and excellent Massey University study of dropouts from extramural studies. Useful work has also been carried out by the Armed Services and the Police.

Gaps in the Research

Appendix D lists the information we obtained from the various institutions we canvassed. The list is not exhaustive and should be regarded as giving only a broad indication of the kinds of studies presently in progress.

Appendix E is an analysis of the continuing education studies identified in the lists of unpublished degree and diploma studies compiled by Keith Pickens.

The dominance of studies in the areas of teacher education and the university is obvious. A large number of studies have also been conducted in the industrial training area, but these studies are diverse and it is difficult to tie them together.

The research gaps indicated by Appendix E seem obvious. Although technical institutes and community colleges collectively provide for the largest number of post-school students (see Table 2 of Appendix C), relatively few degree or diploma studies have been carried out in this area. Secondary school evening class programmes cater for almost 100,000 adult learners, yet only one study in this field is on record. Although state departments other than Education make a large contribution to the field, only agricultural extension has received any real attention as a postgraduate study topic.

There appears also to be a singular lack of research directed towards the key issues of continuing education methodology and curricula. In fact, only the teachers' colleges and universities have paid any serious attention to the former, but there has been an increasing tendency for methodological papers of a fairly straightforward kind (and which might not be called 'research' in any strict sense of the word) to appear in *Continuing Education in New Zealand*. The most significant piece of curriculum research is probably Hunt's recent study of trade mathematics. It may be fair, however, to classify some ongoing research in readability of correspondence material (both at Massey and at the Technical Correspondence Institute) as methodological. Nevertheless, experimental work in this field has been almost non-existent.

Of course, some kinds of material are difficult to classify. The Correspondence School, for example, has completed studies of its adult students who have been working towards school-level examinations, and has produced comparative figures for the examination pass rates of adult students studying through face-to-face evening classes. Such studies, however, fall far short of the detail and sophistication characteristic of the classic Parkyn study of success and failure in the universities; and so does the material prepared and published by the Vice Chancellor's Committee on current university students. Again, statistical reporting of this kind is perhaps better regarded as base line data, rather than research itself.

Regrettably, there has been insufficient time for an analysis of the material which has been compiled by New Zealand students in the educational administration programme of the University of New England, nor for an analysis of similar studies which have been undertaken by educational administration students in New Zealand universities.

On the whole, research studies of the historical kind have occupied a larger and stronger part of the continuing education research field than have studies of any other kind; and while we have referred only to Williams' more recent work, there has been historical investigation carried from as far back as the earlier studies of A.B. Thompson, E. Campbell, D.O.W. Hall, and up to the more recent and specialist monograph by J.A. Dakin on community centres.

Finally, the New Zealand Council for Educational Research has a long-established interest in vocational and professional research - in particular in regard to the study of school leavers and the placement of graduates in the work force. Offenberger's study of technicians, recently published by NZCER, is likely to constitute a major contribution while the establishment of the Adult Education Unit (noted previously) is sure to permit the Council to develop its contribution to continuing education research, in a co-ordinated and systematic fashion.

Conclusions

The comments offered here present only a slender and casual overview of research concerned with continuing education and, therefore, the drawing of conclusions may seem a little premature - perhaps even impertinent. Be that as it may, we would like to think that those interested in the field will give as much attention to the appendices as they do to the comments offered and perhaps with whatever additional information they may have available, arrive at their own conclusions.

From our point of view, however, the chief conclusion to be drawn is that the research available looks at best like a pattern of islands scattered in unknown seas. In the field of continuing education we have merely begun to scratch the surface and to establish parameters within which future research can be carried out.

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Appendix B: Agencies Providing Continuing Education

In New Zealand, the providers of continuing education fall into two groups: (1) national organisations, and (2) regional and local organisations. Each of these two groups can be further divided.

1 National Organisations

I Organisations engaged in facilitating, co-ordinating, administering and providing continuing education resources. (e.g., The Education Department, The National Council of Adult Education, The Maori Education Foundation).

II Organisations engaged directly in continuing education. (e.g., The Correspondence School, The Extramural Studies Department of Massey University).

III Other organisations which direct some of their energies towards continuing education. (e.g., The Churches Education Commission, The New Zealand Industrial Design Council, The New Zealand Theatre Federation Inc.).

IV Organisations whose continuing education programmes are directed to special groups and, as such, not generally open to the public. (e.g., The New Zealand Police Department, The New Zealand Society of Accountants, The Tutor Training Unit).

2 Regional and Local Organisations

I Organisations not (generally) engaged in continuing education as such, but involved in facilitating co-ordinating or administering. (e.g., Art Galleries, Citizens' Advice Bureau).

II Educational organisations engaged directly in continuing education. (e.g., Teachers' Colleges, Technical Institutes, Counselling Centres, Sports Bodies).

Appendix C: Statistics

Table 1: Recent Expenditure on Tertiary Education (Rounded to nearest half million)

Institution	1976	1977	1978	1979
Universities	93m	110.5m	122.5m	138m
Teachers Colleges	45m	48m	47.5m	53m
Technical Colleges	36m	43m)	52.5m	62.5m
Community Colleges	1.5m	2m)		

Source: Estimates

Note: Not adjusted for inflation.

Table 2: Numbers of Students Attending Tertiary Sectors of Education System (Both full and part-time)

Institution	1976	1977	1978
Universities (including extramural)	46,421	47,178	48,511
Teachers Colleges (including kindergarten)	7,521	6,837	6,234
Technical Colleges and Community Colleges (Also Technical Correspondence Institute)	123,873	123,457	141,770

Source: E-1

Table 3: Annual Research Grants (1000s of $)

Institution	1976	1977	1978	1979
Universities	250	500	750	750
NZCER	379	456	493	544
Education Department	-	215	205	223

Source: Estimates

Table 4: Growth in Numbers of Adult Students Learning by Correspondence

Institution	1976	1977	1978
Technical Correspondence School	21,712	22,022	26,404
Correspondence School	5,437	6,558	9,212
Massey University (Extramural)	6,314	6,099	6,488

Appendix D: Recent Research in Continuing Education

In order to obtain information about research currently in progress, we circulated a questionnaire to appropriate institutions. The list below is based on the replies received.

1 Continuing Education Research in the Universities

I Auckland University

Higher Education Research Office: Research into University Teaching and Learning.

Careers Advisory Service: Destination of Graduates.

Centre for Continuing Education and the Education Department of Auckland University: Disadvantaged Readers, New Start for Mature Students, Adult Assessment, Survey of Clients' Needs, Growth of Knowledge and Inequality in New Zealand.

II University of Waikato

Education Department: Changing Teacher Behaviour, Continuing Education of Parents via Radio.

III Massey University

Education Department: Hawkes Bay Community College (New Zealand Department of Education contract), Trade Mathematics (New Zealand Department of Education Contract).

Extension Studies: Adult Education 1945-75.

IV Victoria University

University Teaching and Resource Centre: Teaching and Learning, Keller Principles and Mathematics courses.

Extension Studies: Survey of Present Education Resources in England.

V Canterbury University

Education Department: RNZAF University Scheme, Adult Students at Hagley, Nursing Studies and Nursing Education, Age Differences in the memory of Students.

Extension Studies: Adult Students at Hagley High.

Education Research and Advisory Unit: Internal Publications on Non-Graduates and Assessment.

VI Lincoln College
Careers Advisory Office: Destination of Ex-Students.

VII Otago University
Department of Education: Evening Classes for Adults, Adults at Three Institutions.
Higher Education Development Centre: Educational Technology in Industry in New Zealand, Tutor Student Interaction in Distance Education.

2 Continuing Education Research in the Technical Institutes

I Christchurch Technical Institute
Lathe Measurement Exercise/Study.

II Technical Correspondence Institute
Readability of TCI Assignments, English for Polynesians.

III Central Institute of Technology
Readability of Textbooks.

IV Hawkes Bay Community College
Study of Hawkes Bay students.

V Auckland Technical Institute
Evaluation of DECAL.

3 Continuing Education Research in the Teachers Colleges

I Auckland Secondary
Curriculum Research Project in Music Education.

II Palmerston North
Evaluation of AST unit courses.

III Wellington
The Impact of the new Unit Policy on WTC Programmes, Micro teaching in Student Teacher Training, Self Instructional Audio-visual Modules.

IV Christchurch
End-on and Concurrent Teacher Training.

V Dunedin

The Effects of the New B.Ed. Programmes.

4 Continuing Education Research in Statutory Bodies

I Education Department

Hawkes Bay Community College Survey, Continuing Education Survey, Adult Learning Activities in Christchurch, Re-training courses for women in Technical Institutes, Evaluation of Technical Institute Nurse Training, Trade Mathematics.

II Vocational Training Council

Effectiveness of VTC Supervisory Training, Nature and Extent of Clerical Training, Career Opportunities for Women in the Apparel Industry, Study of Female Apprentices in Electronics Industry, Case Studies in the Multicultural Work Force, Work Outcome Preferences in Three Cultures, The Hiring Process in the Multicultural Workforce, A Study of Labour Stability Cross Culturally.

III New Zealand Council for Educational Research

Parkyn Follow-Up, Evaluation of Apprenticeship Courses, Teachers on Fiji Scheme of Cooperation, Survey of Technician Training, Vocational Guidance of School Leavers, Readability of Long Distance Learning Study Materials, Development and Evaluation of a Civil Flight Instructors IT Course, Vocational Language Training for Migrants, Fire Service Selection, Study Habits for Tertiary Students.

5 Continuing Education Research in Voluntary Associations

I New Zealand Education Institute

Research into Rural Community Attitudes to Education.

II University Students Association

Income and Expenditure on Tertiary Education.

Appendix E: Analysis of Topics of Degree and Diploma Studies of Continuing Education 1970-79

			Number of Studies
1		Institutions Studied	
	I	Secondary School Extension Programmes	1
	II	Adults Returning to Secondary Schools	1
	III	University - Full Time or Part Time	19
	IV	University Extension Programmes	3
	V	University Extramural Enrolments	2
	VI	Teachers College, Teacher Research, In-service Training	79
	VII	Technical Institute and Community Colleges	6
	VIII	Correspondence Organisations	-
	IX	Radio New Zealand Continuing Education Unit	-
	X	Public Libraries, NZCER, Statutory Bodies	-
2		Voluntary Organization Studied	
	I	WEA	-
	II	Country Women's Co-ordinating Committee	1
	III	Playcentre Movement	-
	IV	Marriage Guidance Council	-
	V	Wairarapa Community Action Programme	-
	VI	Nelson Community Education Service	-
	VII	Learning Exchanges	-
	VIII	Community Services	25
3		Training Studied	
	I	Industrial Training Service	19
	II	Industry Training Boards	7
	III	State Services Commission	2
	IV	Government Departments	19
	V	NZ Institute of Management	-
	VI	NZ Ballet School	-
	VII	NZ Drama School	-
	VIII	Professional Associations	5

Note: This is, of course, not a complete analysis as a number of studies were no doubt unidentified - which probably suggests that more care is required in the selection of descriptive titles for university theses.

Source: Derived from Pickens, K.A. *Unpublished Degree and Diploma Studies in Education,* New Zealand Journal of Educational Studies, 10, 2; 11; 14, 1.

Commentary

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In their paper Denny Garrett, Alistair Paterson and Graham Wagner found it necessary first to consider the meanings of the terms 'continuing education' and 'research'. They defined 'continuing education' in its widest sense as 'that education, which is pursued by people who have left school and are no longer required to attend it. This definition includes formal as well as informal kinds of education, as well as any that is specifically vocational'.

Their paper went on to consider mainly research carried out within or about the tertiary institutions: universities, teachers colleges, technical institutes, community centres, etc., and this emphasis on the tertiary level was reflected in the other papers presented at the Conference. For example, there were two papers dealing with student matters,[1] a group of papers dealing with teacher education[2] and, of course, a symposium given over to research carried out in teachers colleges[3] - the only paper outside this general framework was Graham Hunt's paper on *Determining Mathematical Competencies in Needs-Based Carpentry Training.*

While research of this kind tends to illuminate the area, providing recommendations and directions for future investigation, it is a very tenuous platform upon which to draw conclusions for development of future policies. For example, Marianne Tremaine's study on extramural student withdrawal highlighted the need to explore the phrase 'lack of time' before any real and concrete conclusions could be reached. Moreover, the paper tended to ignore the body of vocationally oriented research related to staff training and technical training carried out in organisations such as those with a specific responsibility for training, such as the Armed Forces and Industry. I personally felt this was a serious limitation, as was the very conservative approach to the gathering of information from journals, such as *Continuing Education*, which, while one might automatically turn to them, one would not see them as possibly the main source of information. Other journals, *South Pacific Journal of Teacher Education, British Journal of Educational Technology, Higher Education, Journal of Bio-communication* and many others are a large source of studies related to this general definition of 'continuing education'.

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[1] Marianne Tremaine, *Why Students Withdraw;* John Offenberger, *A Survey of Data Processing Students, 1967-1978.*

[2] David and K.M. Battersby, *The Supervised and the Supervisors;* David Battersby, *Beginning Teachers: Modern Day Robinson Crusoes.*

[3] W.J. Harper and G.H. Robinson, *Research Interests in Teachers Colleges;* Ian Stewart, *Directions for Research in Teachers Colleges.*

Having called attention to the difficulties of definition, I conclude by noting that the general themes that seemed to come out of this paper, and the other papers on 'continuing education' were:

1. The need for more specific training of those engaged in research.
2. The need for more support of those engaged in research.
3. The need for more communication between researchers.
4. The need for a more comprehensive definition of what constitutes research.
5. The problem of dissemination.

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